RELATIVE DIATONIC MODALITY IN EXTENDED COMMON-PRACTICE MUSIC

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To Gale Schaub

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Diatonic modes reemerged in the nineteenth century as an extension of common-practice tonal harmony. The existence of many potential tonics within a single diatonic scale creates a rich ambiguity between "relative modes," which I theorize as *relative diatonic modality*. A note's relation to the tonic is represented by scale degrees, and *diatonic positions* represent the analogous relation to the diatonic scale. The concept of diatonic positions is drawn from la-based minor solfège, which is widely used in music education but not in music theory. In relative diatonic modality, the fuzziness of scale degrees combines with the clarity of the diatonic scale to create a restful centric and harmonic pluralism; and this kind of relational richness and experiential pluralism are simply unavailable in the major and minor modes alone.

Ordered chronologically from the early nineteenth century to the mid twentieth century, five case studies explore the theoretical ramifications and analytical fruits of *relative diatonic modality*. The first case study introduces Reicha's "new harmonic system," one of the first experimental theories in the 1800s to discuss diatonic modes. With a focus on Beethoven's *Heiliger Dankgesang*, the second case study examines the seeming ability of the lydian mode to conform to common-practice harmony. The third and fourth case studies explore diatonic-modal music inspired by the French chant revival and English folk-song revival, respectively. The last case study focuses on the rare, dissonant locrian mode and its peculiar treatment in the twentieth century. Two threads run through all five case studies: (1) the dynamic balance between multiple tonics and a single scale that relative diatonic modality engenders; and (2) the rich compositional treatments that composers find when availing themselves of these special harmonic and melodic resources.

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maj	major
min	minor
dor	dorian
phr	phrygian
lyd	lydian
mix	mixolydian
aeo	aeolian
loc	locrian
PC	plagal cadence
HC	half cadence
PAC	perfect authentic cadence
IAC	imperfect authentic cadence
CC	contrapuntal cadence (♭VII-I or ♭VII^{6}-I, introduced in Chapter 1)
lsmr	**la-so-mi-re** (introduced in Chapter 5)
lsmr C	**la-so-mi-re** cadence (introduced in Chapter 5)

Introduction

If every melody were written in an unalterable scale of seven notes, under the predominant influence of an equally unalterable tonic, the study of modality would present no difficulty. But this is not the case.

–Henri Potiron, *Practical Instruction in Plainsong Accompaniment*

In *The Diatonic Modes in Modern Music*, John Vincent describes the eighteenth and early nineteenth centuries as the "lowest ebb of modality" (1957, 200), a period during which so-called common practice music was largely restricted to the familiar major and minor modes. Such a lack of modal variety was unusual—and unusually restrictive—in Western music, from a larger, historical perspective.

Modes were arguably present since the advent of documented Western music and music theory, and they continued to dominate Western music until the sixteenth century. In the Middle Ages and the Renaissance, conceptualizations of modality were complicated by a hexachordal system and mutations via *musica ficta*, resulting in overlapping scales and raised leading tones and similar devices, some of which are familiar to those who have studied the history of music theory. Through different sources of inspiration—among them abstract scalar relations, church modes, and folk music—diatonic modes emerged again in the late nineteenth century as a compositional resource alternative to Wagnerian chromaticism. However, this historical and aesthetic development has yet to be documented fully (Carver 2005, 74). In broader histories of nineteenth-century music, modality is mentioned in passing (Longyear 1988, 296–97; Dahlhaus 1989, 309–11; Taruskin 2005, 59–69; Powers n.d., Rosen 1995, 410–16) or haphazardly theorized at best (Van der Merwe 2004; see Taruksin 2007).

Yet the story turns out to be a critical one in the history of music. During the twentieth century, entire styles of music developed around genuine seven-note, strict diatonic modes.

Nowadays, diatonic modes are an essential technique to play over individual chords, and modal jazz in particular uses diatonic modes extensively. Popular and rock music also routinely use all six consonant diatonic modes (all but the locrian mode). The modern listener is arguably more familiar with the soundscape of diatonic modes than listeners alive during its "lowest ebb" in the eighteenth and early nineteenth centuries would have been.

This dissertation examines diatonic-modally extended common practice music, from a first point of modal experimentation in the early nineteenth century through the French chant revival and English folk-song revival of the later nineteenth century to the eventual adoption of the dissonant locrian mode in mid-twentieth century. The composers featured in this dissertation saw diatonic modes as an opportunity to expand the harmonic resources of music within "common-practice" traditions. At the turn of the nineteenth century, Anton Reicha introduced the diatonic modes as a secondary harmonic resource, proclaiming that "the more tonalities we have, the more advantageous it is for art" (2011, 198).[1] This sentiment was repeated again and again throughout the century. Later, at the turn of the twentieth century, Cecil Sharp argued that, through diatonic-modal folk songs, the modern musician would "realize that the modes really offered a new channel of musical expression, and an escape from the present restricted tonality" (1907, 47).

The scope of repertoire overlaps with those in John Vincent's *The Diatonic Modes in Modern Music* (1951) and Nicole Biamonte's doctoral dissertation on nineteenth-century modality (2000), two of the most extensive studies on diatonic modes to date. Yet there is more at stake here than just the diatonic modes themselves. The dissertation's larger goal echoes those

[1] "[J]e mehr Tonarten wir hätten, je vortheilhafter wäre es für die Kunst."
[2] See Barker 1989 and Judd 2002 for an overview of Greek modes. Gollin 2004 takes an anachronistic but clarifying transformational approach to modal transmission.
[3] Straus also makes the same point (2005, 140–42).
[4] "D'après ce système nous aurions deux gammes primitives, une majeure et une mineure, et 5

of Daniel Harrison's *Pieces of Tradition* (2016), which expands the analytical canon by examining new techniques that *supplemented* (rather than supplanted) common-practice harmony.

Central Claim

From a practical point of view, there is seemingly little fuss in using diatonic modes: there are no new tuning systems or new scales to learn, only new tonics to be introduced. Yet, herein lies the deceptively simple crux of my dissertation: *because a given diatonic scale may contain multiple potential tone centers, centric ambiguity easily arises in diatonic-modal music.*

For most pieces in the common-practice period, one can simply turn to the end of a score to identify the key of a piece. If the piece ends on an A-minor chord, then there is a good chance the piece is in A minor. However, in listening to diatonic-modal pieces, not only are there more modal possibilities for a single tonic chord, but, as examples throughout this dissertation will show, even the final chord of a piece can be ambiguous. (For example, a piece ending on the aeolian tonic may sound like a deceptive cadence in the major mode.) The resulting key relations are analogous to relative major and minor modes—hence *relative diatonic modality*, or *relative modality* for short.

By recognizing that all notes of the scale are possible tonics, the central aesthetic tenet of my dissertation is one of experiential pluralism and relational richness. This view runs counter to the pervasive and deeply rooted concept of unity and coherence in the singular, unambiguous tonic, a concept elaborated in the monotonal theories of Schenker (1979) and Schoenberg (1954). Even in the two texts on modes discussed above (Vincent 1957; Biamonte 2000), tonics are presumed as starting points of analysis, and there is little mention of ambiguity.

Yet listeners do not always have to perceive diatonic-modal music as perpetually ambiguous; rather intervals of the scale become an alternate way to listen to diatonic relations. In contrast to ambiguous tone centers, the diatonic scales and the intervals within are often clearly delineated in modal music. Therefore, I also propose an alternate pathway of listening based on **la**-based minor solfège, which anchors to intervals in the diatonic scale rather than the tonic. Therefore, my core theory of relative modality juxtaposes two complementary kinds of hearing, one based on scale degrees, and the other based on intervals in the scale.

Diatonic modes and extreme chromaticism both emerged as harmonic extensions of the major/minor modes in the nineteenth century, and they share a common thread of introducing tonic ambiguity and relational complexity. Even if the musical surface of diatonic modes and extreme chromaticism appear antithetical to each other—one simple (i.e., seven notes) and one complex (i.e., twelve notes)—underneath that there is an important and profound commonality: a kind of deep relational richness. The surface simplicity of diatonic modes in the nineteenth century disguises the relational richness that stems from the scale's tonic variety.

A study of diatonic modes could potentially encompass more than "music theory" in a conventional sense; history, culture, mathematics, cognition, and many more subfields of musical study come into the picture along the way. The present study emphasizes the analysis of individual pieces and the listening experience in the scope of the modally extended major/minor system. Emerging from these emphases is a minimal theory that contains only those core components which are essential for exploring the relational richness in certain diatonic-modal repertoires; a theory which, as I will suggest along the way, invites future refinement and extension.

Chapter Breakdown

The dissertation is in four parts. Part I comprises the lengthy Chapter 1, which introduces the core theory using passages in Gustav Holst's First Suite for Military Band, Op. 28 (1909) as preliminary examples. Five chronologically ordered case studies follow, each of which expands on a particular facet of relative modality in relationship to a specific topic or a school of composers. Together, the case studies show the broad ramifications of the theory laid out in Chapter 1.

Chapters 2 and 3 make up Part II. In these chapters, I examine isolated diatonic-modal pieces in the early nineteenth century. Chapter 2 introduces Anton Reicha's experimental modal theory and his compositions based on it. I consider my dissertation a spiritual successor to Reicha's forward-looking theory in the form of an analytical retrospect. Around the time when Renaissance modes and church keys largely fell out of use, Reicha outlines a "new harmony system" that proposes diatonic-modal extensions to common-practice harmony using all six consonant modes. Reicha's theoretical thoughts on diatonic modes were first published as a commentary to the modal Fugue no. 13 in 36 Fugues, Op. 36 (1803–04). Chapter 2 also delves into his didactic *Practical Examples* (1799–1803) and accompanying *Philosophical-Practical Remarks*, which predate the fugues and remained in manuscript form until 2011.

Reicha's writings are some of the few early documents to combine insights about scale systems and stylistic matters that do not directly relate to Renaissance modes or church keys. Reicha's technique of generating modal material by diatonic transposition and prescription of major-mode endings relates to fundamental aspects of relative modality; his theory and music are telling of what a composer steeped in common-practice harmony thought about diatonic modes.

After Reicha's experimental harmonic system, Chapter 3 examines afresh two well-studied lydian passages: one in the *Heiliger Dankgesang* of Beethoven's String Quartet in A minor, Op. 132 and one in Chopin's Mazurka in C major, Op. 24, No. 2. Unlike any other non-major/minor mode, the lydian mode contains two kinds of leading tones, the usual $\hat{7}$ and $\sharp\hat{4}$ as $\hat{7}$/V, which allows the lydian mode to maintain a certain degree of similarity to common-practice harmony. Yet, Beethoven and Chopin's lydian passages show that such a similarity does not preclude the effects of relative modality. Chapter 3 ends by discussing the large-scale ramifications of lydian openings and endings by comparing those in Beethoven's *Heiliger Dankgesang* and Chopin's Mazurka in A minor, Op. 17, No. 4.

Together, Chapters 2 and 3 showcase isolated theoretical and musical works from the early nineteenth century and discuss topics most relevant to early-century composers. Part III includes Chapters 4 and 5, which use the perspective developed in Parts I and II in order to better understand two institutional modal systems that originated from the French plainchant revival and English folk-song revival, respectively. Unlike composers from Part II, composers from Part III explored all six consonant modes and produced hundreds of pieces in which centric ambiguity is considered normative.

Chapter 4 explores relative modality in what French organist-composers called Gregorian tonality—the 8- and 12-mode systems without the usual inflections such as the raised leading tone. This chapter begins with the seminal chant accompaniment treatise *Traité théorique et pratique de l'accompagnement du plain-chant* (1857) by Louis Neidermeyer and Joseph d'Ortigue, and concludes with music of the treatise's early adopters Alexandre Guilmant and Eugène Gigout. Not only does this chapter fill an important theoretical gap in the musical landscape of France, but it also examines a theoretical extension of liturgical modal theory that

places relative modality center stage. In the continuing lineage of organist-composers that extends through Messiaen and Duruflé, Gregorian tonality can still be heard today in some Catholic churches in the form of chant accompaniment and organ improvisation.

Chapter 5 explores relative modality in English folk-song theory, folk-song arrangements, and folk-song inspired music, therefore providing historic and stylistic background to Holst's First Suite discussed in Chapter 1. Beginning with Cecil Sharp's seminal folk-song treatise *English Folk-Song: Some Conclusions* (1907) and arrangements, I examine how his background in major/minor-mode harmony shaped his folk-song accompaniment philosophy and his view towards tonic ambiguity. Sharp's pioneering work provides the background for the more complex folk-song arrangements and folk-song inspired works of Ralph Vaughan Williams.

Following Part I, the theory of relative modality, Part II, the discussion of relative modality in isolated works of the early nineteenth century, and Part III, relative modality in compositional schools of the late nineteenth and early twentieth century, Part IV of the dissertation consists of the sole chapter, Chapter 6, which celebrates the dissonant locrian mode coming into its own in the mid-twentieth century.

Despite straddling diatonic modes and dissonant organization—both of which characterized twentieth-century music—the locrian mode remained a rarity in theory and practice. Through the music of Debussy, Shostakovich, and Gelineau psalmody, in Chapter 6, I explore how composers and theorists grappled with the locrian mode. I argue that one of the main reasons behind locrian rarity stems from tonic ambiguity, since listeners and composers may prefer other consonant tonics over the locrian mode's dissonant tonic triad. Ironically, the rarest, most unstable locrian mode is also the best example of relative modality's multiple tonics.

In this dissertation, it is not my intention to enumerate every compositional device possible in each mode, nor to make sweeping theoretical and historical generalizations. Rather, my goal is to celebrate the exceptional aspects of individual pieces—to show how modal compositional techniques come to life in the context of entire works. Therefore, the choice of music is selective rather than exhaustive; but the works chosen are unified insofar as each emphasizes relative diatonic modes in an age we usually associate with the chromatically charged major/minor system. As Vincent and Biamonte's studies suggest in their different ways, the historical and stylistic development of modal composition is multifaceted and diverse. My semi-chronological case studies serve as waypoints in the larger history of musical experimentation and expansion, a description of which would require a much longer survey indeed. To that aim, I have provided a historical context for each chapter, and it might be said that my project is to a certain limited degree musicological; but my central, unifying goal is to show how profound artistic complexity can arise from an unassuming and apparently common-place scale. And this ontological and aesthetic attitude is one that might have implications for music theory beyond the domain of diatonic modality.

Chapter 1: Relative Modality and Holst's First Suite

Solely comparing scale degrees, the main differences between the diatonic modes and the major/minor modes are inflected degrees (e.g., ♮$\hat{7}$ to ♭$\hat{7}$) and the harmonies those degrees alter (e.g., vii^{o} to ♭VII). However, the addition of modes to the major/minor system is non-trivial: it vastly increases the possible relationships among tonics, scales, and sonorities, and it vastly increases the compositional possibilities therein. The new relational richness that modal extensions engender is part of the repertoire's appeal.

It is my goal in this initial chapter to suggest, in some preliminary ways, how such relational richness saturates diatonic modal music, and to outline a handful of essential concepts to be unpacked at greater length in later chapters. My theory of relative modality emerges directly from, and is contingent upon, several different strands of existing scholarship and resources. This is therefore a kind of hybrid, integrated chapter, since the theory and the literature are inseparable from one another.

First, I will introduce some essential historical concepts about modality, highlighting concepts especially pertinent to this study. Second, I will discuss the concept of centric ambiguity through a short excerpt from Holst's Intermezzo from his First Suite for Military Band in E♭ major, Op. 28. Third, I will examine the same passage from a scalar perspective and introduce **la**-based minor solfège as an integral tool for the analysis of diatonic-modal music. Last, I will show how larger sections of Holst's Suite can be better understood when heard with the concepts of centric ambiguity and **la**-based minor solfège in mind.

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Historical Modal Concepts

(a) Ptolemy's octave species

Ethnic name	Intervals (high to low)	Modern modes
Mixolydian	T-T-T-S-T-T-S	locrian
Lydian	S-T-T-T-S-T-T	major/ionian
Phrygian	T-S-T-T-T-S-T	dorian
Dorian	T-T-S-T-T-T-S	phrygian
Hypolydian	S-T-T-S-T-T-T	lydian
Hypophrygian	T-S-T-T-S-T-T	mixolydian
Hypodorian	T-T-S-T-T-S-T	aeolian

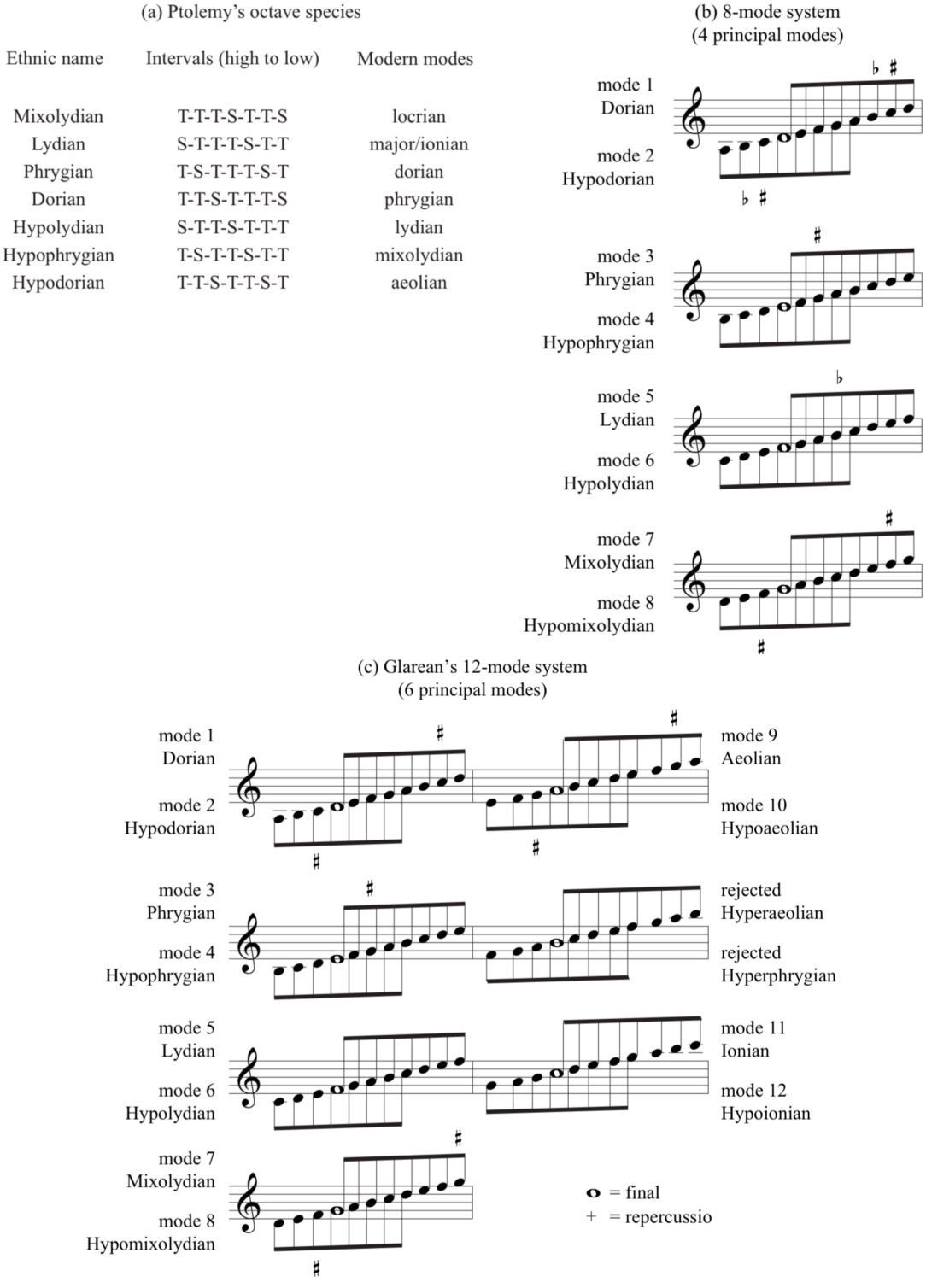


Figure 1.1. Historical modal systems.

Throughout the history of Western music and music theory, *mode* has been a thickly textured concept, characterized by theoretical complexity and inter-textual confusion. One of the earliest explications of mode in the modern sense is from second-century Greek music theory, although there is little documentation of its analytical application (if any). Representative of early Greek theory is Ptolemy's rotations of the octave species (Figure 1.1a), which have a different set of Greek ethnic names to modern use.[2] When modes were applied to Christian liturgical chant, Carolingian theorists first adopted the 8-mode Byzantine *oktoechos* to pair psalm tones with antiphons, in which modes were determined by range and final (Cohen 2002, 308–13). Not long after, the 8-mode system was combined with Greek theories to systematize musical understanding and standardize liturgy (Cohen 2002, 308). The 8-mode system continued to serve for liturgical purposes even as music grew in polyphonic complexity, and this system persisted into and past the sixteenth theory. An abstraction of it is shown in Figure 1.1b, which shows all the main notes and typical "accidentals" used. Since then, *mode* has been defined varyingly as combinations of species, final, ambitus, psalm-tone repercussios and other melodic properties (Powers, n.d.; Judd 2002). Besides the emergence of staff notation, the abstractions in Figures 1.1a–1b differ in three main ways. First, a different set of Greek names became attached to each octave span through a series of misreadings by Boethius and the anonymous author of *alia musica* (Judd 2002; Gollin 2004). Second, the 8-mode system is primarily organized by final (represented by whole notes) and ambitus, not octave species. As a result, there is no one-to-one correspondence between Figures 1.1a and 1b, and many theorists prior to the sixteenth century grappled with the extra Hypomixolydian mode (Judd 2002).

[2] See Barker 1989 and Judd 2002 for an overview of Greek modes. Gollin 2004 takes an anachronistic but clarifying transformational approach to modal transmission.

Third, the 8-mode system accepts some degree of "accidental" inflections, and Figure 1.1b shows the most typical ones in polyphonic use. Take modes 1 and 2 (the Dorian modes) for example. As a direct precursor to the raised leading tone, the note C# is mandatory for polyphonic cadences "by reason of beauty" (*causa pulchritudinis*). As opposed to *musica recta* (correct music), C♯ is a form of *musica ficta* (false music), a type of early chromaticism. B♭ was typically used to avoid melodic and harmonic tritones "by reason of necessity" (*causa necessitates*). The mid-fifteenth century saw a change in B♭'s status from *musica recta* to *musica ficta,* as *ficta* became associated with black keys on the keyboard (Berger 1987, 34–38).

The now-common Greek ethnic names come from the 12-mode system presented in Heinrich Glarean's 1557 treatise *Dodecachordon*, which was assimilated and widely disseminated in Zarlino's writings (Figure 1.1c). Glarean's main contribution was associating the modal pairs (e.g., Dorian and Hypodorian) with a distinct octave species (Judd 2002, 383–88). Some theorists disregard ambitus altogether, so that the authentic modes subsume the plagal modes; this is especially true in Lutheran chorales (Lester 1989, 21–25). Although Glarean misinterpreted Greek modal theory (Judd 2002, 383), his association of modes with octave species and the later collapse of ambitus distinction rendered mode-as-octave species closer to its Greek original, albeit with a completely different set of Greek names.

Even when the 12-mode nomenclature was standardized into modern mode names, Ptolemy's nomenclature and the 8-mode system still exerted limited influence on nineteenth- and twentieth-century diatonic-modal music. Bourgault-Ducoudray adopted the Ptolemaic ethnic names and they gained some degree of traction in France; for example, Charles Koechlin uses them exclusively in his seminal *Traité de l'harmonie* (1928–30). The monophonic 8-mode system remains in use in Gregorian chant today (Catholic Church, 1957), and from the

nineteenth-century plainchant revival arose a *ficta*-less interpretation of the 8- *and* 12-mode systems, which I discuss in Chapter 4.

Beyond the competing models of scalar abstraction, a fundamental tension in modal theory was (and remains) its application to constantly changing musical styles (Judd 2001)—a tension that has broad conceptual and terminological implications. But the present study is about the extension of the major/minor system via diatonic modes in the nineteenth and twentieth centuries specifically, so the terminology I use caters to the needs of the project and the concepts essential to it. This allows me to circumvent, to some degree, the morass of historical modal debates while at the same time extracting from historical theories concepts useful for my own core theory.

I will use the terms *scale* and *diatonic scale* in the scale-theoretical, intervallic sense (Tymoczko 2004, 221–22):

> A ***scale*** is a set of notes, the ascending order of which is used as a unit for measurement ("steps"). Scale is conceptually prior to mode, i.e., scale does *not* imply a tonic, whereas a mode does.
> A ***diatonic scale*** is the specific, octave-repeating intervallic pattern …TTTSTTS… in scalar order, without specifying a mode or a starting pitch.

Therefore, the ascending melodic minor and harmonic minor scales are *not* diatonic in this context. Since scales do not imply tonics, "3♭ scale," for example, is a more neutral descriptor than "E♭-major scale."[3]

Building upon scales, then,

> A ***diatonic mode*** (preliminary definition) is the presence of a tonic (tone center, or locus of

[3] Straus also makes the same point (2005, 140–42).

centricity) within a diatonic scale.

I will continue to use Glarean's set of authentic-ambitus Greek ethnic names in its strict octave-species, scalar sense, with the bounding (first and last) notes as the tonic. Tonic finding will be discussed in the sections that follow.

Combining scale and mode completes the description of a key.

A ***key label*** (e.g., F dorian) has three interconnected properties of *tonic*, *mode*, and *scale* (e.g., F-dorian-3♭).

Any two properties imply the third (e.g., F-dorian-3♭ is also F-3♭ or dorian-3♭), but conventional nomenclature (e.g., F dorian) actually obscures the scale—an essential component of this dissertation, one perhaps overlooked because of the conventional nomenclature. While I will continue to use the conventional nomenclature, I do so with the understanding that it implies the extra property of scale. In this dissertation, I will use lowercase mode names (e.g., dorian) for modern modes and capitalized ones (e.g., Dorian) for historical mode names.

Figure 1.2 shows two common ways of generating and conceptualizing all seven modes from C major, one from shared tonics, and one from shared scales. The two relations recall Ptolemy's two successive derivations of octave species (from *his* Dorian mode) (1989, 331–38).

Parallel keys share tonics, but they have different scales and modes.

This concept is also referred to as *modal interchange* when realized musically (Persichetti 1961, 42–43). Parallel keys add scale-degree variety, and differ by scale-degree inflection (i.e., accidentals). so that a parallel or inflectional view characterizes modes as inflections of the major or natural minor mode (except for the locrian mode). From this perspective, the lydian mode is "major with ♯$\hat{4}$." The concept of "characteristic scale degrees" (Riemann 1896, 92) exemplifies

this line of thinking. Riemann uses “Dorian sixth,” “Phrygian second,” “Lydian fourth,” and “Mixolydian seventh” to describe temporary tonicizations or inflections in major/minor modes (Riemann 1989, 92).

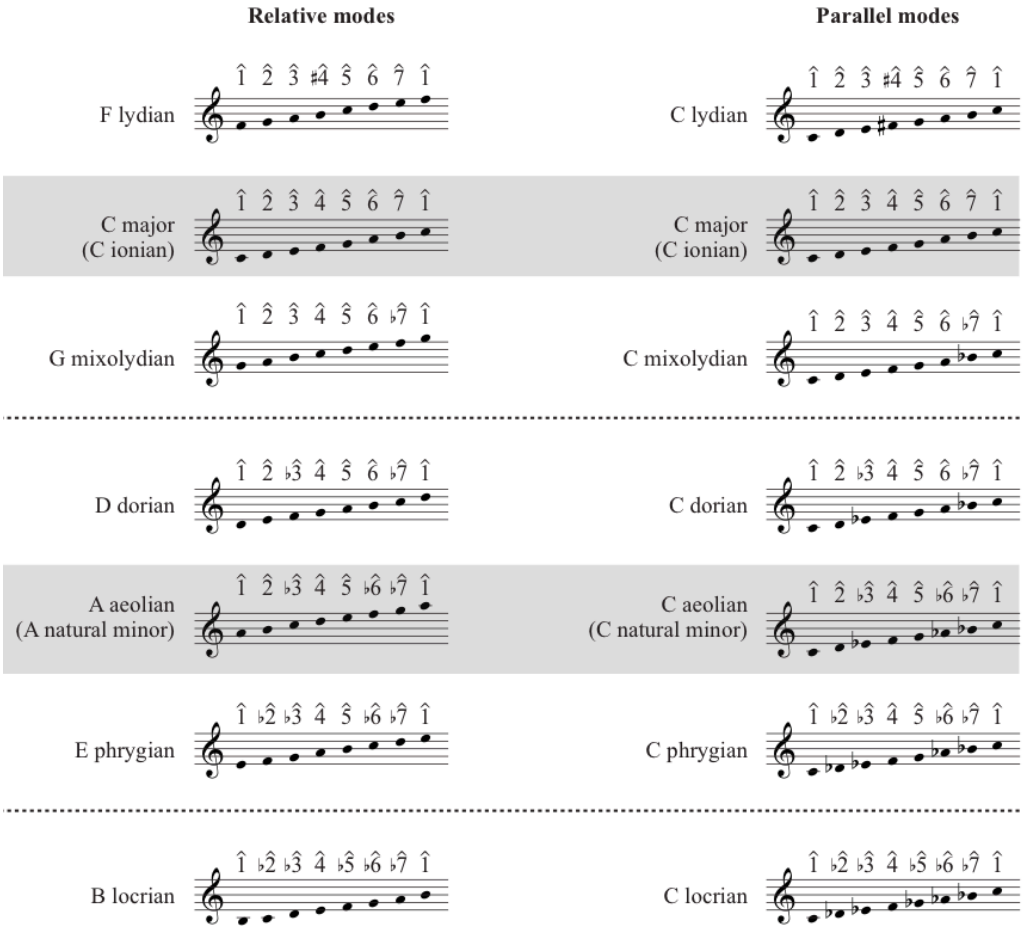


Figure 1.2. Scalar representation of the parallel and relative modes of C major.

Rather than using, say, “mixolydian seventh” to specify scale degrees in a modal context, in this study, I use inflected scale degrees to specify the exact interval. In other words,

A ***scale degree*** is a specific interval from the tonic. Natural scale degrees represent major or perfect intervals, flat or flattened scale degrees represent minor or diminished intervals, sharp or sharpened scale degrees represented augmented intervals.

Put another way, one can think of inflections as alterations of the major-mode scale degree. This system has the advantage of referring to specific scale degrees without specifying mode. For example, $\flat\hat{7}$ is always a minor seventh from the tonic whether it belongs to the mixolydian dorian, aeolian, phrygian, or locrian mode.

Relative keys share the same scale, but they have different tonics and modes.

Relative keys can be derived by rotating the scalar representation of a mode (e.g., XYZ to YZX to ZXY). A relative or rotational view would characterize modes in relation to scale degrees of the relative major/natural minor mode. From this perspective, the lydian mode is "major beginning on $\hat{4}$."

The parallel and relative key-relations in Figure 1.2 are not isolated from one another; rather, they combine in a *diatonic modal key space* (Table 1.1). There are many possible orientations for such a key space. Here, I have prioritized relative and parallel relations as the vertical and horizontal axes, respectively, so that the two axes highlight each mode's a priori connections to the major/minor modes. To make the space more compact, parallel keys reside within a 7-key subsection (bounded by lydian and locrian modes), beyond which the tonic itself is inflected by the scale. Keys that share the same mode are aligned diagonally from bottom left to top right and common-practice major/minor modes are highlighted in grey, showing their common-practice origins. The aeolian mode and the common-practice minor mode share the same cell to show that the former is the same as the "natural minor" variant of the latter, and that the same key signature represents both modes. Black boxes highlight the special-case locrian mode (**Chapter 7**), the only one in which the tonic triad contains a dissonance.

The diatonic modal key space represented in Table 1.1 suggests how diatonic modality vastly expands some of the fundamental musical relationships of tonal music. Allowing enharmonic equivalence, the twenty-four keys in the major/minor system were plainly sufficient for most of the eighteenth and nineteenth century. The dorian, phrygian, lydian, mixolydian, and aeolian modes add 60 more keys to the mix. As Reicha exclaims, "84 scales in total and just as many cadences. What wealth, unknown up to these days!" (Reicha [1804–05] 2013, 222).[4]

Table 1.1. Diatonic modal key space from 7♭ to 7♯.

⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
7♯	F♯ lyd	C♯ maj	G♯ mix	D♯ dor	A♯ min	A♯ aeo	E♯ phr	B♯ loc
6♯	F♯ maj	C♯ mix	G♯ dor	D♯ min	D♯ aeo	A♯ phr	E♯ loc	B lyd
5♯	F♯ mix	C♯ dor	G♯ min	G♯ aeo	D♯ phr	A♯ loc	E lyd	B maj
4♯	F♯ dor	C♯ min	C♯ aeo	G♯ phr	D♯ loc	A lyd	E maj	B mix
3♯	F♯ min	F♯ aeo	C♯ phr	G♯ loc	D lyd	A maj	E mix	B dor
2♯	F♯ phr	C♯ loc	G lyd	D maj	A mix	E dor	B min	B aeo
1♯	F♯ loc	C lyd	G maj	D mix	A dor	E min	E aeo	B phr
0♮	F lyd	C maj	G mix	D dor	A min	A aeo	E phr	B loc
1♭	F maj	C mix	G dor	D min	D aeo	A phr	E loc	B♭ lyd
2♭	F mix	C maj	G min	G aeo	D phr	A loc	E♭ lyd	B♭ maj
3♭	F dor	C min	C aeo	G phr	D loc	A♭ lyd	E♭ maj	B♭ mix
4♭	F min	F aeo	C phr	G loc	D♭ lyd	A♭ maj	E♭ mix	B♭ dor
5♭	F phr	C loc	G♭ lyd	D♭ maj	A♭ mix	E♭ dor	B♭ min	B♭ aeo
6♭	F loc	C♭ lyd	G♭ maj	D♭ mix	A♭ dor	E♭ min	E♭ aeo	B♭ phr
7♭	F♭ lyd	C♭ maj	G♭ mix	D♭ dor	A♭ min	A♭ aeo	E♭ phr	(B♭ loc)
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

So far, I have discussed modal relations only as scalar abstractions; indeed, scalar abstractions have been the focus of an entire subfield of diatonic scale theory in the past forty years. Structures similar to my diatonic modal key space have been discussed in Hook 2008,

[4] "D'après ce systême nous aurions deux gammes primitives, une majeure et une mineure, et 5 relatives, et par la transposition, 12 gammes primitives mineures, et 60 gammes relatives ; en totalité 84 gammes et autant de cadences. Quelle richesse, ignorée jusqu'á nos jours !"
12 x 7 = 84. Reicha is assuming enharmonic equivalence, counting both the aeolian mode and the common-practice minor mode, and excluding the locrian mode.

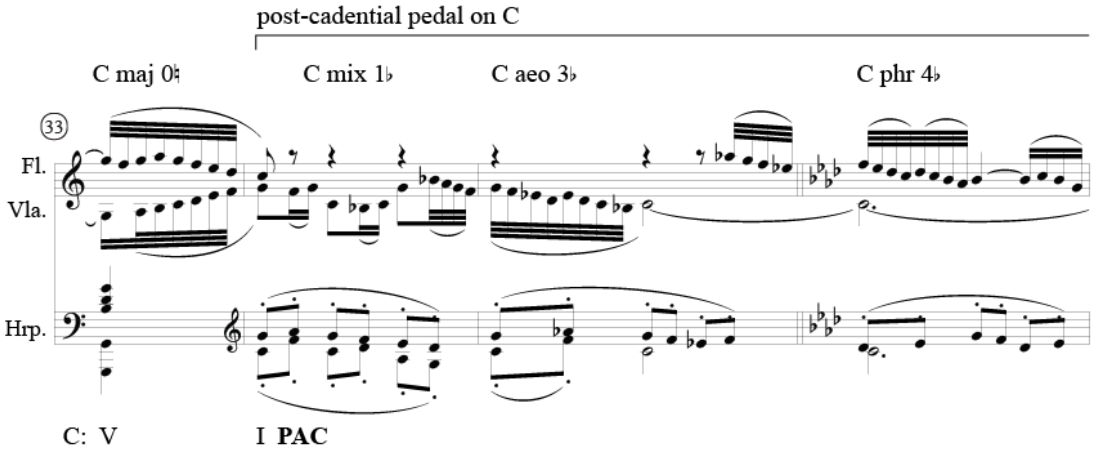
Douthett 2008, Bates 2012, Clampitt and Noll 2011, Noll and Garbers 2013, and Yust 2015.[5] The present project has a scale-theoretical and transformational undertone that I explore elsewhere (Lam 2017), but the main focus of this dissertation is to establish historic, stylistic, aesthetic, and analytical foundations rather than elucidate mathematical connections.

Examples 1.1a and 1.1b show the two fundamentally different key relations as realized in musical passages by Claude Debussy and Gustav Holst. Example 1.1a suggests one tonic and many scales among parallel keys; Example 1.1b shows one scale and many tonics among relative keys. Both examples begin with a V-I cadence on C and then move to other modes. In Example 1.1a, Debussy gradually adds more flats to the post-cadential emphasis on C. By contrast, Holst stays in the same scale in Example 1.1b and moves the tonic about after the cadence. Holst's B section begins and ends on the F-dorian tonic, but the tonic wanders between F, C, and even E♭. Unlike parallel modes, the shifting of tonic in a relative modal context radically alters the fundamental sense of centricity and musical hierarchy that the major/minor system presupposes; it is even more remarkable that these relations occur within a single diatonic scale. For these reasons, relative-modal relations gain a special quality I refer to as

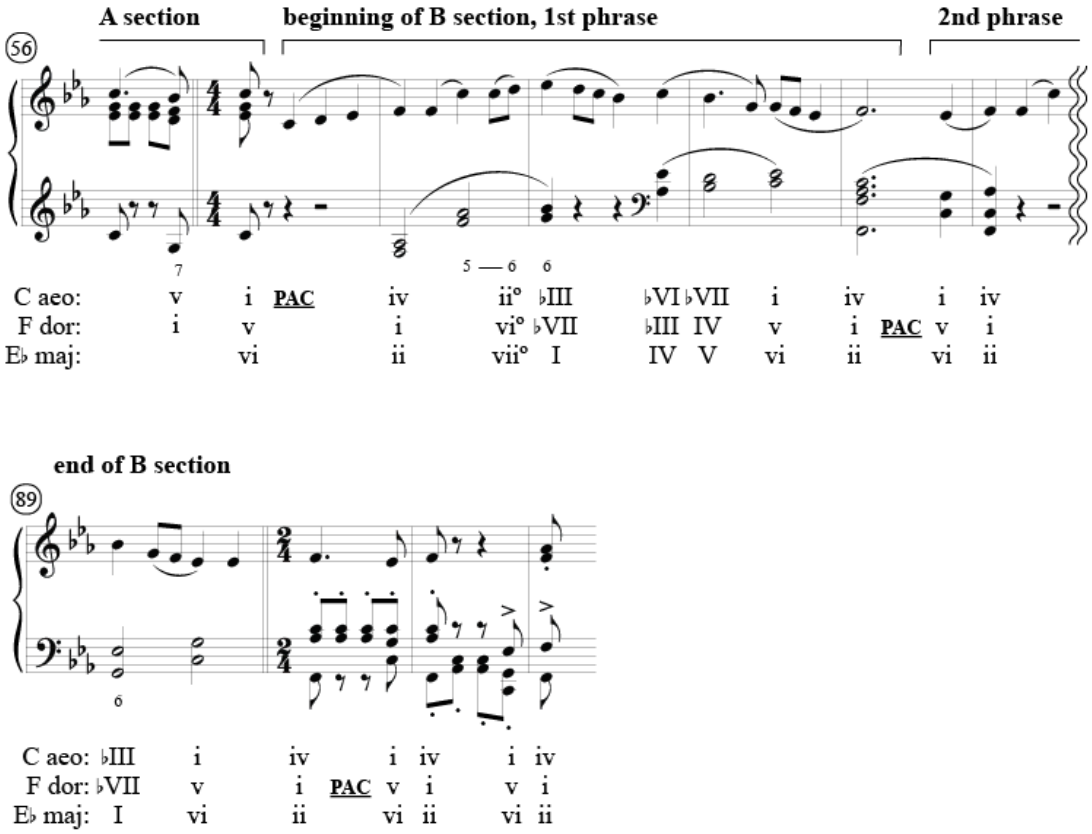
Relative modality (short definition), the presence of multiple tonics within the same diatonic scale, containing experiential plurality, relational richness, and compositional possibilities unavailable in major/minor harmony.

[5] Transformational and diatonic scale-theoretical studies typically ignore the common-practice minor mode, and Hook 2007 describes its treatment as "an embarrassment" (183).

(a)



(b)



Example 1.1. Debussy, Sonata for flute, viola, and harp (1915), mvt. II, Interlude, mm. 34–36 (a), and Holst, First Suite in E♭ for Military Band, Op. 28 (1909), mvt. II, Intermezzo, mm. 56–62 and 89–92 (b).

The basic argument is as follows: because multiple tonics exist within a single diatonic scale (and raised leading tones are no longer required), the tonic is established contextually and centric ambiguity easily arises. This kind of ambiguity is not a negative feature that requires clarification; rather, it is a positive addition to the total experience of the music. In other words, many components of common-practice tonality remain, but adding diatonic modes threatens a main component of tonality—centricity—through relative relations. This type of organization makes a departure from common-practice harmony where centricity is usually stable within a diatonic scale.

A large amount of what Tymoczko calls extended common-practice music employs diatonic modes, from the music of composers such as Bartok, Stravinsky, Prokofiev to the continuing traditions of jazz and popular music (2011, 4). However, in this dissertation, I will circumscribe my target repertoires to the closest modal "kin" to, or "minimal" expansions of common-practice harmony, exploring the first steps in this stylistic development. What I call

Diatonic-modally extended common-practice music refers to a body of music from ca. 1800 to ca. 1950 in which common-practice harmony is reimagined and enriched through diatonic modes.

The passages in Example 1.1 are good initial illustrations. Potential terminological confusion abounds when dealing with a musical environment such as this; so, to be clear, throughout this dissertation,

Common-practice tonality*, *common-practice harmony, and ***major/minor system*** will be used interchangeably to refer to music in the major/minor modes ca. 1650–1900.

As much as possible, I will refrain from using the more general terms *tonal* and *tonality* to avoid confusion. Therefore, common-practice tonality refers to a specific practice which is expanded in a manner that casts a new light upon the seemingly unremarkable diatonic scale.

As Example 1.1 shows, most core elements of common-practice harmony remain—diatonic scale, the focus on consonant triads; chordal grammar based mainly on root motions of descending thirds, fifths, and ascending seconds; melodic, harmonic, and metric coordination, cadences as an essential rhetorical device; and beginning and ending on the same tonic.[6] Yet, these core elements are organized around diatonic modes instead of major and minor scales. It is as if the only extension to common-practice harmony is the availability of various inflected scale degrees such as ♭$\hat{7}$ and ♯$\hat{4}$. But allowing modes necessarily attenuates or even negates other core elements: tritone resolution to the tonic is no longer a given; the tritone even resides within the locrian tonic triad. The theoretical implications of relative modality have yet to be studied in detail. In the remainder of this chapter, I will discuss the two fundamental components of relative modality—centricity and scale—through an extended analytical discussion of Holst's First Suite. My focus here and throughout the initial chapters is relative modality. Only in later chapters will I reintroduce parallel relations against the background of relative modality.

[6] See Rings 2011, 3; Straus 2005, 130; Tymoczko 2011; Hyer 2001, 727–28 for similar enumeration lists of core tonal elements.

***

Centricity in Relative Modality

Previously, I have defined mode as "tonic within a scale". In this view, relative modality is really about tonic-finding inside a pre-established scale. Figure 1.3 expands on the two fundamental components of relative modality, which I will unpack below.

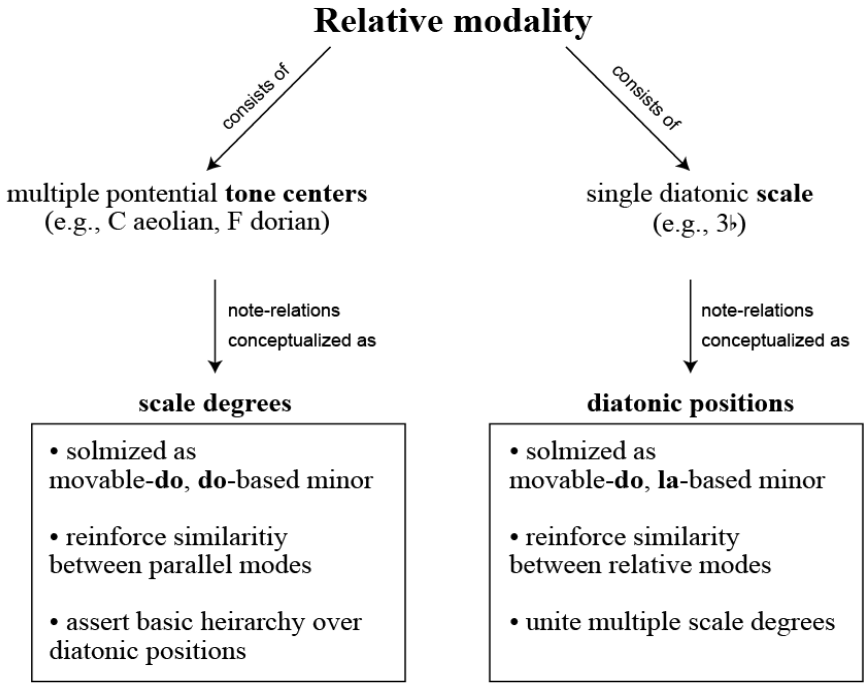


Figure 1.3. Conceptual map of core components of relative modality.

I will adopt Tymoczko's definition of centricity here:

> ***Centricity*** is the phenomenon where "over moderate spans of musical time, one note is heard as being more prominent than the others, appearing more frequently and serving as a goal of musical motion" (Tymoczko 2011, 4).

Within the modally extended common practice, which retains features such as harmonic-melodic distinction, triadic harmony, and clear phrase structure, I equate *centricity* with *tone*

center, or *tonic* ($\hat{1}$). The three terms are not necessarily equivalent—Arthur Berger, for example, suggests that the terms priority, tone center, and tonic denote increasingly specific concepts (1963, 11–12). More recently, Kleppinger has expanded on the idea of centricity in post-tonal music (2011), but in music that closely resembles common-practice harmony, all of the terms suggest one and the same thing. Tymoczko's definition above is a good case in point: his definition of centricity has little difference with the common-practice tonic.

Centric ambiguity

Although a refreshed interest in diatonicism is often couched, historically or stylistically, as a reaction against or resistance to Wagnerian chromaticism (Longyear 1988, 296–97; Taruskin 2005, 59–69), as a technique of harmonic expansion, relative modality's effect of harmonic plurality shares an affinity with Romantic-era techniques not usually associated with modes. Similar ambiguities have been described in chromatic contexts, such as "*Mehrdeutigkeit*," "floating tonality," "functional extravagance," and "tonal pairing."[7] Chromatic ambiguity arises from the abundance of extra-scalar inflection; ambiguity between relative modes, however, arises from the abundance of tonics in one scale. And I suggest a considerable expressive or aesthetic difference between the ambiguity I am describing in relative modality and the tense, "problem"-oriented ambiguities authors have so described in chromatic music: in the music I will address in the dissertation, relative modality's centric ambiguity serves not as a compositional crux nor as a dramatic friction that requires resolution. Rather,

Centric ambiguity in relative modality is a hazy, nebulous, and restful kind of ambiguity that is usually grounded by the clarity and stability in which other musical elements are presented.

[7] Weber [1832] 1994; Schoenberg [1922] 1978, 383–84; Smith 1986; BaileyShea 2007.

For example, Harrison describes a saturation of tonics in Tallis's Phrygian psalm tone as reimagined by Vaughan Williams (2011). Although confined to a monophonic line, Reti also describes a "melodic tonality" whereby a center can be created simply by "accentuating it, dwelling on it" (Reti 1962, 40). In this way, my concept of ambiguity is closer to those in post-tonal music than to late-Romantic chromatic ambiguity.

In many studies on centricity, authors explicitly enumerate the subtle contextual factors that determine centricity, which include criteria such as first, last, long, low, loud, metrically accented, fifths and fourths, consonant harmony, and stepwise convergence; but the precise manner in which these contextual factors interact has yet to be studied in detail (Tymoczko 2011, 179; Kleppinger 2011, 76; Wile 1995, 127). Although historically and stylistically removed, scholars have proposed similar ideas of diatonic ambiguity (Doll 2017) and "modal migration" (Richards 2017) in rock music and "mutability" in Russian music. On late-nineteeenth-century modalism, more scholarly attention has been devoted to the relation between the phrygian mode (with the "G♯," Picardy-third inflection) and the relative minor mode (with the raised leading tone) in Andalusian and eastern European music, as well as the music of Bruckner and Rachmaninoff (Manuel 1989; Carver 2005; Johnston 2014; Bakulina 2014).

In the field of music cognition, research in key-finding has mostly focused on the major/minor system. Even then, results regarding relative keys are telling. For example, studies with a distributional approach suggest that relative major and minor keys are perceived similarly (Krumhansl and Kessler 1982); studies with a structural approach find that even minute pitch reordering to diatonic fragments changes key perception (Brown 1988).[8] More directly related, in a recent study of the emotional connotation of modes, Temperley and Tan discuss a "shifting-

[8] See Temperley and Marvin 2008 and Krumhansl 2004 for an overview of tonic-finding studies.

tonic hypothesis" where listeners may have mistaken their intended mode for the relative major (2013, 253). Although they ultimately reject the hypothesis, further research in this direction may reveal subtleties of the perception of diatonic modes that are intimately related to the topic at hand.

The landscape of ideas related to tonic-finding is a complex one; yet it is possible to streamline some of the complexity when addressing the target repertoire of this dissertation. Since I am examining a stylistic extension of the major/minor system that happened during a period when composers and listeners were steeped in that system, exposure to and familiarity with major/minor modes have a significant role in perception and analysis. This greatly simplifies the basic principle for tonic-finding, because novel techniques will typically be heard and characterized with reference to a more familiar system, especially when they share the same scale-system. From this,

> ***Major/minor resemblance,*** or ***common-practice resemblance,*** describes how centricity is identified by its resemblance to tonic-defining elements within the more familiar common-practice tonality, along with more general parameters such as long, low, and loud.

The most salient tonic-defining elements are typically those at the ending, including root-progressions by fifth (harmonic schema), stepwise convergence (melodic-polyphonic schema), and opening and closing notes as tonics (formal schema). Like the identification of centers in post-tonal music, schematic and scalar resemblance is inherently fuzzy and multivalent.

To elucidate these ideas, I will return to the Holst passage (see again Example 1.1b) and examine the three tone centers in it. I will first address F dorian, and after that the implications of hearing it in C aeolian and E♭ major.

Hearing F dorian. In *Guide to Wind Band Masterworks*, Garofalo labels the B-section key of Holst's Intermezzo as F dorian (1992, 46). Example 1.1b shows the opening and ending of the B section. This label seems innocuous enough: F dorian opens and closes the phrase melodically and harmonically. The phrase opens with a rising stepwise anacrusis from the dominant to the tonic; at the downbeat, the melodic $\hat{1}$ and $\hat{5}$ are accompanied by a registrally low, consonant tonic chord. The phrase ends on an F-dorian PAC with dorian versions of prototypical harmonic and melodic schemas IV-v-i and $\hat{2}$-$\flat\hat{7}$-$\hat{1}$, respectively.

The key (and mode and tonic) determined by the boundaries of a piece, section, or phrase has a privileged status. Since chant theory in the Middle Ages, the final note of a piece has persisted as the main determinant of mode (Wiering 1998, 91; 200). In common-practice music, the tonic is usually determined most authoritatively by the closing chord; the opening chord usually matches that closing chord; everything enclosed by the initial and final manifestations of that chord is, in most tonal theories, hierarchically subsumed under it; and musical events are goal-directed towards that same chord. For the different combinations of opening and closing chords, I will use modifiers as a short-hand to identify potential tonics. Amongst them,

Closing tonic is a tonic determined by the last note;

opening tonic is a tonic determined by the first note; and

enclosing tonic is a tonic that is both opening and closing tonics.

One can similarly qualify modes and keys (e.g., *closing mode*, *closing key*, *dorian enclosure*), and also specify the formal unit they occupy (e.g., closing tonic of the piece, closing mode of the phrase, opening key of the secondary theme)

Hearing C aeolian and E♭ major. Closing tonics seemingly elevate *mode* from a cognitively and experientially defined concept to a fixed, objective one. Such a juxtaposition is indeed one of the most fundamental tensions in defining "tonality" (Hyer 2002, 723–24). As the last thing that happens at a *stop*, or ceasing of musical activity, finality is but one feature of closure. Even with closure based on typical scale-degree motion at cadences (such as F dorian above), closure and centricity remain contextual, conditioned by the understanding of stylistic processes and patterns (Hopkins 1989, 10–11). In other words, finality and centricity do not necessarily imply one another in extended diatonic music. As more tonic options become available, closure relies increasingly on rhetoric features, i.e., coordination of secondary parameters such as texture, register, and rhythm, harking back to properties of centricity noted above (Hopkins 1989, 13; Caplin 2004, 56; Anson-Cartright 2007, 2).[9]

While I do not dispute Garafalo in identifying F dorian as "the key" of the B section based on the F enclosure, I argue that one can also freely attend to C aeolian and E♭ major, bypassing the F-dorian enclosure altogether. The diverse interpretations and high-order ramifications that stem from multiple tonics is one of relative modality's main features, and it would be wrong to use Occam's Razor to remove the multivalency of relative modes.[10] The continued analysis below suggests that the modally extended common practice puts "*context-* and *tonality-dependent features* in dynamic balance" (Satyendra 1997, 194); or, to cast it in

[9] Even basic music-theoretical concepts such as *cadence* are hard to define (Neuwirth and Bergé 2015, 7–10).

[10] Yet those who crave a sure footing may find solace in the clear diatonic scale, which I introduce in the next section.

Wile's terminology from his work on "neocentricity," *systemic centricity* and *context-assertive centricity* overlap to a great degree (1995, 103–106).[11]

While an F-dorian hearing relies on dorian enclosure, C and E♭ are tonics "native" to the 3♭ scale. From a purely scalar perspective, the 3♭ scale relates most directly to common-practice E♭ major, less directly to common-practice C minor (the aeolian mode restricted to C minor's natural or descending melodic form), and the least related to a common-practice F-centered key. This set of relationships can be thought of as a kind of

Major/minor preference, by which I mean to describe how, everything else being equal, a listener engrained in major/minor modes would prefer those tonics in a given diatonic scale.

Besides being a preferred key of the 3♭ scale, a strong C-aeolian center is already established via a PAC (m. 57) prior to the dorian-enclosed phrase, and it is possible for the aeolian tonic to persist in hearing the whole dorian-enclosed phrase with minimal effort. What I have identified as dorian tonics could also be heard as aeolian subdominants and dorian dominants as aeolian tonics. This is especially true during a first listening: perhaps the pause on the F-minor chord (m. 61) comes as a surprise, the dorian PAC perceived retrospectively. Even when the dorian-enclosed phrase is isolated, the dorian dominants still have some tonic potential to them. A subdominant ending engenders several different hearings: (1) a *relative-modal subdominant tonicization,* (2) a custom, non-common-practice cadence such as a *plagal half cadence*, (3) or simply a *subdominant stop*, all of which imply an *open structure*. Only the first

[11] Systemic centricity refers to centricity that arises through common-practice hierarchy, in which salience of the center plays a lesser part. For example, an augmented fourth or diminished fifth is enough to locate the tonic. By contrast, in a context-assertive centricity, centric salience is foremost in defining a basic hierarchy.

of these imply some degree of tonicity for the final. Unlike a regular tonicization, where the centric shift is paired with a scalar shift,

> ***Relative-modal tonicization***, or simply ***modal tonicization***, is a temporary centric shift within the same scale.

In Holst's phrase, if F is heard as a temporary tonic within C aeolian, the PAC on F would be a *relative-modal tonicization* of C aeolian's subdominant.[12]

The combination of a rhetorical stop and a non-common-practice ending creates an

> ***Inconclusive final/ending/cadence*** or ***center-final incongruity***, whereby the final chord/note of a piece/section is not heard as the tonic.

Under the persistent C-center, the F-minor chord is an inconclusive final. Chapter 3 will discuss a particularly well-known inconclusive final from Beethoven's lydian-mode *Heiliger Dankgesang*, where "the tonic sounds like a subdominant" (Kerman 1952, 57), and the same description also applies to Holst's dorian cadence.

Inconclusive finals share an affinity with aesthetic ideas that emerged in the context of nineteenth-century music:

> ***Open structure*** (Satyendra 1997), after Rosen's ***Romantic Fragment*** (Rosen 1995, 41–115), is the absence of a tonic at a piece or section's boundaries, where some other referential off-tonic chord takes the place of the tonic.

Central to the concept of open structure is the seemingly paradoxical statement "the tonic sounds like a non-tonic." In the case of the Holst Intermezzo's B section, a persistent C-aeolian

[12] In Chapter 2, I will explore modal tonicization in more detail, specifically in relation to Anton Reicha's modal ideas.

hearing would suggest an open structure, whereby the aeolian subdominant assumes the traditional enclosing role of a tonic.[13]

The same analytical issues also extend to E♭ major, which emerges (at the latest) around m. 59 in the Holst work. Although there is no preceding E♭-major cadence, Holst's phrase is still biased towards E♭ major under major/minor bias. The E♭ center is the most strongly asserted at m. 59: the melody rises to a high E♭ atop an E♭^{6} chord and arpeggiates an E♭-major triad in the next measure. Furthermore, a large swath of the phrase's harmony is no different to common-practice major-mode harmony (…vi-ii-vii^{o6}-I^6-IV-V-vi…). However, an E♭-major hearing would interpret the phrase ending as a modal tonicization of the E♭-major supertonic, or even a more far-fetched (but not entirely impossible) "supertonic stop."

In the discussion above, I have argued that centric ambiguity arises in the modally-expanded common practice because there are multiple potential tone centers that may be determined contextually. This leads to experientially malleable hearings, the ambiguity of which is fuzzy, restful, and open to reinterpretation. The ambiguity between relative modes is also fundamentally unlike those in the major/minor system, which requires "clarification" or "resolution" (Smith 2007).[14] The potential keys gain a great deal of their centricity from their

[13] Later chapters of the dissertation will unpack the implications and applications of open structure in a variety of ways: In Chapter 2 Reicha's theory forbids any possible open structures, Chapter 3 discusses open structures in Beethoven and Chopin's lydian music, and Chapter 4 asserts that open structures are essential strategies for composing in French diatonic church modes.

[14] The three centers—E♭, C, and F—are both *synchronic* (one-point-in-time) and potentially *diachronic* (across-time) in Temperley's usage of the terms (2001, 219). As Temperley explains, *synchronic ambiguity* occurs when "a segment of music seems to offer two equally plausible interpretations, even from a particular vantage point in time." *Diachronic ambiguity* occurs when "[a]n event, or group of events, is interpreted first one way, then another." The three centers are synchronic if all centers are treated as equal. The ambiguity is only diachronic when the closing tonic F is elevated as a kind of "clarification" that hierarchically subsumes everything else that

common-practice resemblances: F dorian from F minor, C aeolian from C minor, and E♭ major as itself, creating a relational richness that goes beyond that possible from a single scale and tonic. From the perspective of the enclosing F dorian, major/minor resemblance takes two different directions in the modal key space as represented in Table 1.2. Resemblance across the key space involves keys that share the same key signature; resemblance downwards involves keys that share the same tonic, but belong to a different key signature. (Minor keys, of course, can also have raised submediants and leading tones.) It is all the more remarkable that the rich and quite audible set of resemblances in Holst's phrase happen entirely inside a single, apparently unassuming 3♭ scale—again, consider how different this is from the kind of rich relationships we are accustomed to describing in highly chromatic music.

Table 1.2. Implied keys in Holst, First Suite, Intermezzo.

	F	C	G	D	A	E	B
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
0♮	F lyd	C maj	G mix	D dor	A min A aeo	E phr	(B loc)
1♭	F maj	C mix	G dor	D min D aeo	A phr	(E loc)	B♭ lyd
2♭	F mix	C maj	G min G aeo	D phr	(A loc)	E♭ lyd	B♭ maj
3♭	**F dor**	**(C min)** **C aeo**	G phr	(D loc)	A♭ lyd	**E♭ maj**	B♭ mix
4♭	**(F min)** F aeo	C phr	(G loc)	D♭ lyd	A♭ maj	E♭ mix	B♭ dor
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

To summarize, relative modality is composed of a single scale and multiple possible tone centers. In the modally-extended common practice, general emphasis and resemblance to common-practice tonics gives rise to centricity. One such emphasis is the enclosing tonic: a chord that encloses a formal unit is typically the tonic. but in Holst's Intermezzo, another resemblance—the major/aeolian tonics of a diatonic scale—can potentially override the

---

precedes it within its grouping. The type of ambiguity involved depends on the epistemological status of the musical element in question.

enclosing dorian tonic. In this case, the dorian phrase end becomes a modal tonicization or inconclusive cadence. If the closing tonic does not sound like a tonic, then it creates a paradoxical open structure. The beauty of relative modality lies at least partly in the simplicity of its pitch content and the experiential richness that arises from centric ambiguity. Yet tonic-finding tells only half the story. In the next section, the 3♭ scale, which has so far been only a background character in the story, will become a main theoretical player in its own right.

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Scale in Relative Modality

Huron's description of Wagner's cadences applies equally to the modally extended common practice, in which "[e]xtraordinary effects become the vernacular language" (2006, 347). So far, I have described these extraordinary effects as alterations or resemblances of common-practice harmony using scale degrees, which are indispensable to tonal theory. However, to truly describe the modal vernacular, one must also address the sum effect of shifting centers.

"Scale degree" characterizes a note entirely based on its relation to the center. By contrast, what I call

Diatonic position characterizes a note based on its intervallic positions within the diatonic scale *without regard to the position of the tonic or the mode*.

This theoretical move is similar to that of Richard Cohn's: in the face of "essential enharmonic relations" that generate indeterminism and contradiction within diatonic tonality (2012, 11), he posits a "double syntax" for late nineteenth-century chromaticism—triadic transformations based on smooth voice-leading and traditional harmonic analysis based on the

tonic (2012, 195ff). In this dissertation, I also argue for a similar dual component in relative modality—scale degrees based on centricity and diatonic positions based on the scale. Thus, the two essential components of mode—scale and centricity—receive equal attention from two complementary vantages, the combination of which describes a vernacular language of relative modality that truly extends beyond common-practice tonality.

The concept of diatonic positions, it should be recognized, complicates the notion of scale-degree *qualia* introduced in Huron 2006, Rings 2011, and expanded in Hansberry 2017 and Ian Quinn's forthcoming book *Ludus Tonalis Novus*. In the present investigation, scale-degree qualia may be better formulated as a component of a more general octave-equivalent "note-qualia." Some theoretical and historical explanation will be helpful here, in order to clarify the relationship between scale degree and diatonic position, and to clear ground for the ideas to be developed in subsequent chapters.

C major (alignment of **do**-C-$\hat{1}$)

…	me	te	**fa**	**do**	**so**	**re**	**la**	**mi**	**ti**	fi	di	…
…	E♭	B♭	F	C	G	D	A	E	B	F♯	C♯	…
…	♭$\hat{3}$	♭$\hat{7}$	$\hat{4}$	$\hat{1}$	$\hat{5}$	$\hat{2}$	$\hat{6}$	$\hat{3}$	$\hat{7}$	♯$\hat{4}$	♯$\hat{1}$	…

E♭ major (alignment of **do**- E♭-$\hat{1}$)

…	me	te	**fa**	**do**	**so**	**re**	**la**	**mi**	**ti**	fi	di	…
…	G♭	D♭	A♭	E♭	B♭	F	C	G	D	A	E	…
…	♭$\hat{3}$	♭$\hat{7}$	$\hat{4}$	$\hat{1}$	$\hat{5}$	$\hat{2}$	$\hat{6}$	$\hat{3}$	$\hat{7}$	♯$\hat{4}$	♯$\hat{1}$	…

C aeolian (alignment of **la**-C-$\hat{1}$)

…	me	te	**fa**	**do**	**so**	**re**	**la**	**mi**	**ti**	fi	di	…
…	G♭	D♭	A♭	E♭	B♭	F	C	G	D	A	E	…
…	♭$\hat{5}$	♭$\hat{2}$	♭$\hat{6}$	♭$\hat{3}$	♭$\hat{7}$	$\hat{4}$	$\hat{1}$	$\hat{5}$	$\hat{2}$	$\hat{6}$	$\hat{3}$	…

F dorian (alignment of **re**-F-$\hat{1}$)

…	me	te	**fa**	**do**	**so**	**re**	**la**	**mi**	**ti**	fi	di	…
…	G♭	D♭	A♭	E♭	B♭	F	C	G	D	A	E	…
…	♭$\hat{2}$	♭$\hat{6}$	♭$\hat{3}$	♭$\hat{7}$	$\hat{4}$	$\hat{1}$	$\hat{5}$	$\hat{2}$	$\hat{6}$	$\hat{3}$	$\hat{7}$	…

Figure 1.4. The *diatonic slide rule*.

Figure 1.4 shows four different keys and their corresponding diatonic positions (as the familiar solfège syllables), letter names, and scale degrees within the grey box (a kind of *diatonic slide rule*). What delimits the diatonic scale on either side of the grey box is Richmond Browne's position-finding rare interval—the tritone—as **fa** and **ti** (1981). The solfège syllables are fixed to the grey box, and the bottom two strips may move independent of the grey box. Left-right sliding motions of a row correspond to some movement within the modal key space.[15] The four configurations in Figure 1.4 show contrasting key relationships from the Holst example above. C major and E♭ major share the same mode—the diatonic positions correspond to the same scale degrees in both keys. C major and C aeolian are parallel keys—they share the same tonic. E♭ major, C aeolian, and F dorian are relative keys—the diatonic positions corresponds to the letter names instead of scale degrees.

In contrast to the modal key space (and also to Tymoczko 2011, 187; Bates 2012, 39), which only shows tonic and mode, the representation in Figure 1.4 has the clear benefit of showing all the scale members in a simple layout.[16]

But there is more baked into Figure 1.4 than just facility of visualization. The apparently simple theoretical step of establishing transpositionally equivalent (i.e., relative-pitch) labels for white keys or major-mode scale degrees has several non-obvious ramifications. Diatonic positions provide a sharp conceptual distinction between centricity and scale; in Figure 1.4, the distinction is represented by the fact that scale degrees in the bottom strip can slide independently to the solfège on the top strip.

[15] The slide rule echoes Boethius's "wing diagram," which shows each slide position next to each other (Atkinson 2008, 23). Furthermore, the sliding motions may be readily converted into transformational terms in future studies.
[16] Noll and Garbers's iOS app *MIDI SolFa Mode-Go-Round* (2013) shows the same kind of information in a circular representation.

In doing so, diatonic positions unite multiple different centric hearings under one roof and suggest a continuity between them that no existing analytical methodology can easily afford, retaining a tether to essential concepts inherent in tonal theories while allowing a genuinely modal musical conception full rein. For example: **re** could be the major supertonic, dorian tonic, phrygian subtonic, lydian submediant, mixolydian dominant, aeolian subdominant, or locrian mediant. The implications of this for the music I am examining are more thoroughgoing than they might at first seem. And this leads to a final, fully formed definition of diatonic mode:

Diatonic mode (final definition) is tonicity/centricity established on a diatonic position. Each Greek ethnic name is associated with centricity on a diatonic position.

Diatonic positions can also describe diatonic music without necessarily identifying a tonic.[17] Just as scale degrees point to the tonic and a tonic-based hierarchy by numeration, diatonic positions reinforce a flat, non-hierarchical hearing by describing intervallic positions only. In a purely scalar account, the dorian tonic is *equivalent* to the major-mode supertonic, aeolian subdominant, etc.

But one of the most compelling reasons for the use of diatonic-positional solfège is its historic use—some of it in texts and pedagogical traditions outside the normal compass of English-language scholarly music theory. Diatonic positions correspond to a **la**-based minor movable-**do** solfège that also prescribes **re**-based dorian, **so**-based mixolydian etc.; including John Curwen's widely-used *Tonic sol-fa* system (1853) in Britain, which Steve Larson calls

[17] Tymoczko makes a stronger claim that scale may exist without centricity (2011, 180). In this case, centric ambiguity disappears, since there is no presumption that one must choose a center at all. However, a diatonic-modal style that retains the core elements of common-practice harmony often *does* encourage a sense of centricity through those elements. In a similar vein, centricity may also exist without a scale.

diatonic collection position (1993).[18] This concept is implicit in diatonic scale theory, and Noll and Garbers 2013 calls it *step position*. Diatonic position is closer to Guido's original conception of solmization than to "modern" scale degrees. Guido's hexachord syllables do not indicate modal final or specific positions in the gamut; instead, they denote intervallic position in a hexachord. Likewise, the relative solfège proposed here denotes positions in a diatonic heptachord. Along with **do**-based minor solfège, which maps solfège syllables onto scale degrees, the two complementary solfège systems account for relative modality's two essential components: centricity and scale, respectively (refer again to Figure 1.2).[19] However, since there is no other widely accepted alternative to represent diatonic positions, I will reserve the solfège syllables solely for diatonic positions (**re**-based dorian solfège) in the present study.[20]

Holst's passage again suggests a useful point of departure. The English pastoral school of composition—which Holst, Sharp, and Vaughan Williams spearheaded to a large degree—emerged during the nationwide use of Tonic sol-fa (i.e., diatonic-positional solfège).[21] Example

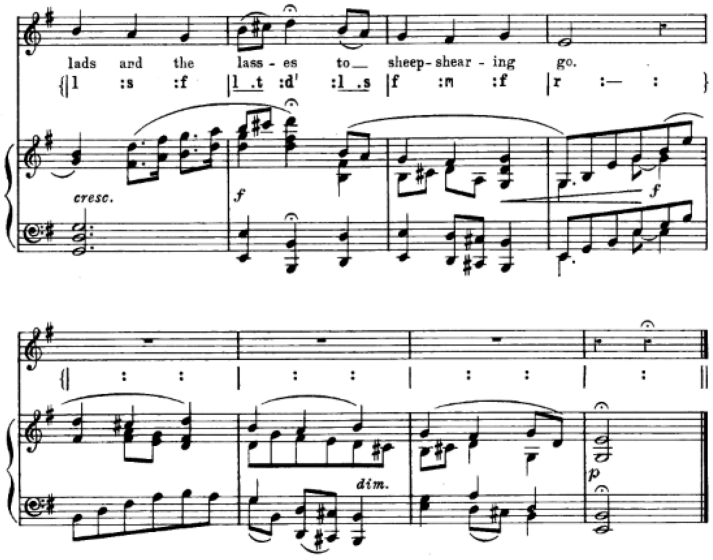
[18] See Rainbow and McGuire 2014 for a historical overview. See Demorest 2001 and Winnick 1987 for a choral training perspective on relative solfège, for a music pedagogy perspective, and Rogers 2004 for a perspective from theory pedagogy. Each perspective responds differently to the unique demands of the author's own field.

[19] The modern Kodály method actually prescribes both **la**- and **re**-based dorian solfège. In the fifth-grade Kodály classroom, teachers introduce the dorian mode by singing folk song *Drunken Sailor* through **la**- *and* **re**-based dorian solfège (Houlahan & Tacka 2015, 285–86). The "**la**-based dorian" is a hybrid system that prioritizes a rotational view between major and minor modes and an inflectional view for all other modes. See Houlahan & Tacka 2008 for a comprehensive account of the Kodály method. The consideration of this hybrid system would be fruitful for future research.

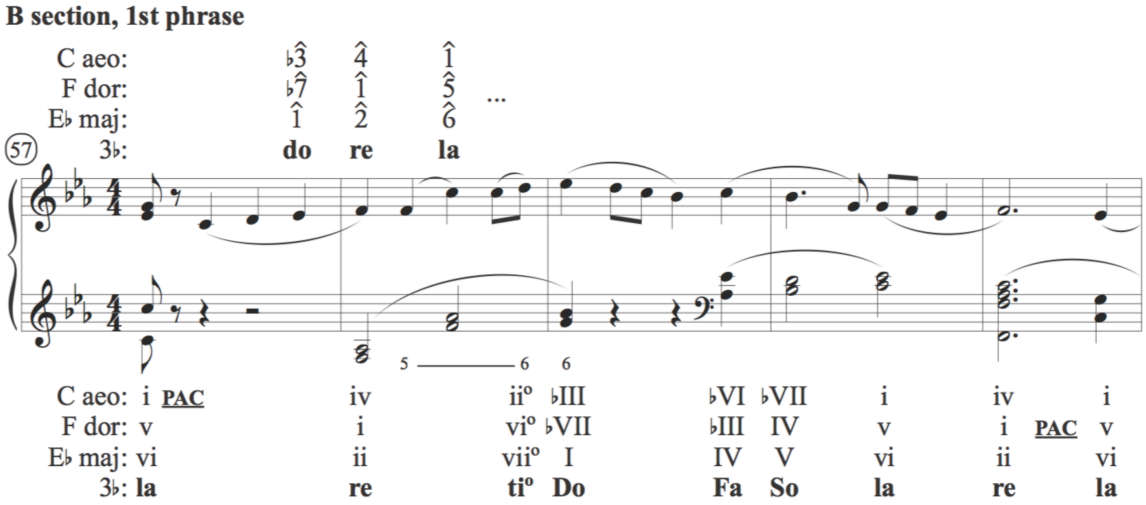
[20] Berger 1963, Santa 2000, and Yust 2015 have numbering schemes that achieve a similar neutral result. However, they are somewhat awkward for the task of position-naming here.

[21] Of all the types of music discussed in this dissertation, English pastoral music as a whole has perhaps the most explicit and easily documented connection to diatonic positions; I consider it at length in Chapter 6. However, as other chapters will show, music traditionally or historically solmized or sung using other solfège systems may also benefit from a diatonic-positions perspective, just as how music solmized in fixed-do could benefit from scale-degree solmization.

1.2 shows an example of diatonic positions being used (along with rhythmic notation) as a notational substitute for a dorian folk song collected and arranged by Cecil Sharp. In this study, when appropriate, I will use diatonic positions in describing both melody and harmony.

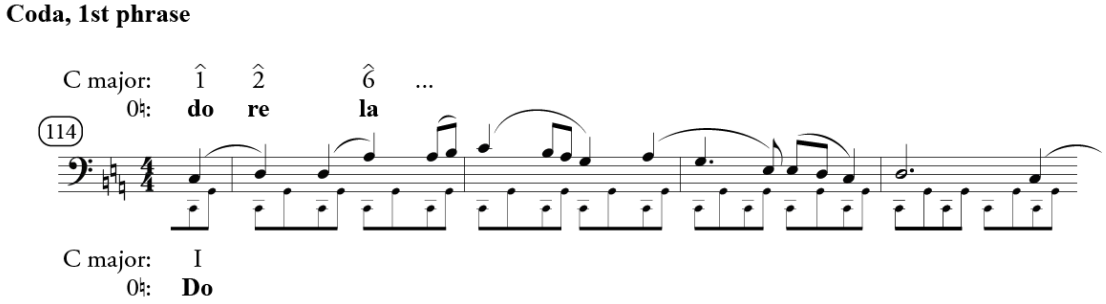


Example 1.2. Cecil Sharp, *Folk-Songs for Schools*, Set X (1908), "Bold Nelson's Praise," last eight measures.



Example 1.3. Holst, First Suite in E♭ for Military Band, Op. 28 (1909), mvt. II, Intermezzo, B section, first phrase (mm. 56–62).

Example 1.3 repeats Example 1.1b with additional diatonic positions under the equivocal scale degrees. As counterparts to Roman numeral labels, diatonic positions may also be capitalized to denote major chords when they are used to denote chord roots. I have also added melodic annotations to a motivically significant melodic incipit (E♭-F-C). In addition to conceiving the melody in three different keys, it is possible to hear the melodic incipit as **do**-**re**-**la** in diatonic positions *no matter where the tonic is*. Similarly, the first two chords are root-position **la**- and **re**-chords regardless of the tonic. Cadences can be described as a **re**-cadence (or, to be more specific, a **la**-**re**-cadence) without necessarily imposing a definite center or hierarchy; rather, it only identifies what chord the phrase ends on. Therefore, and I think significantly, things that seem quite different—what I have described as a dorian PAC, a tonicization of the aeolian mode's subdominant, a tonicization of the major mode's supertonic, or a plagal half cadence in the aeolian mode—are united under the umbrella of "**re**-cadence." And what I have called a "dorian-enclosed phrase" can also be reconceived as a **re**-enclosed phrase that gathers the multiple centers in one concept.



Example 1.4. Holst, First Suite, Intermezzo, coda, first phrase (mm. 114–17).

The concept of diatonic positions also allows for connections to be made across different points in a work that might not otherwise be made. In Holst's Intermezzo, two different

statements of the theme that cannot, according to more conventional tonal theories, be brought together cleanly, are united by analysis of diatonic positions. Compare the lyrical melody in Example 1.3 with that in Example 1.4, which is from the coda of the Intermezzo. Example 1.4 features the same lyrical melody, over a C major pedal. Holst transposes the melody down by a minor third, but the enclosing F-**re** is replaced by a pedal C-**do**, thereby combining the chromatic third-transposition with a fifth relation between the enclosing tonics. Between the 3♭ version of the melody in Example 1.3 and the 0♮ version in Example 1.4, the only unambiguous commonality between the two melodies is their diatonic positions (**do**-**re**-**la** etc.). Unlike ambiguities in the tonal repertoire, this is neither a "resolution" of a previously ambiguous passage, nor does it "clarify" a previous ambiguity. Rather, Holst uses the two passages to explore the relational richness and modal versatility that centric ambiguity engenders and which diatonic positions can help us to understand.

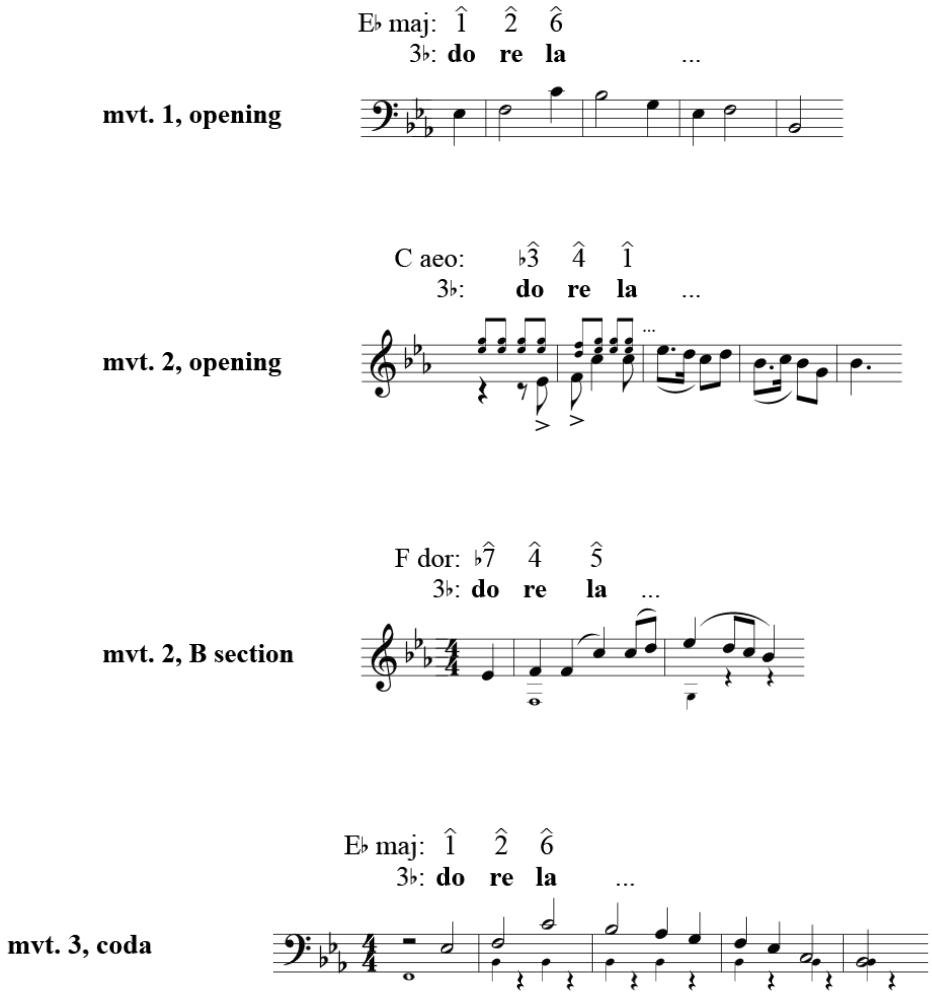
To summarize, I have shown how diatonic positions complement ambiguous scale degrees. When pitch centricity becomes hazy and fluid, diatonic positions come into sharp focus by anchoring the music to the clear diatonic scale. In the 3♭ middle section of Holst's Intermezzo, unequivocal diatonic positions complement multiple scale-degree interpretations. Then, when Holst restates the theme in the coda, diatonic positions emerge as a determinant of continuity and unity with the earlier thematic statement.

***

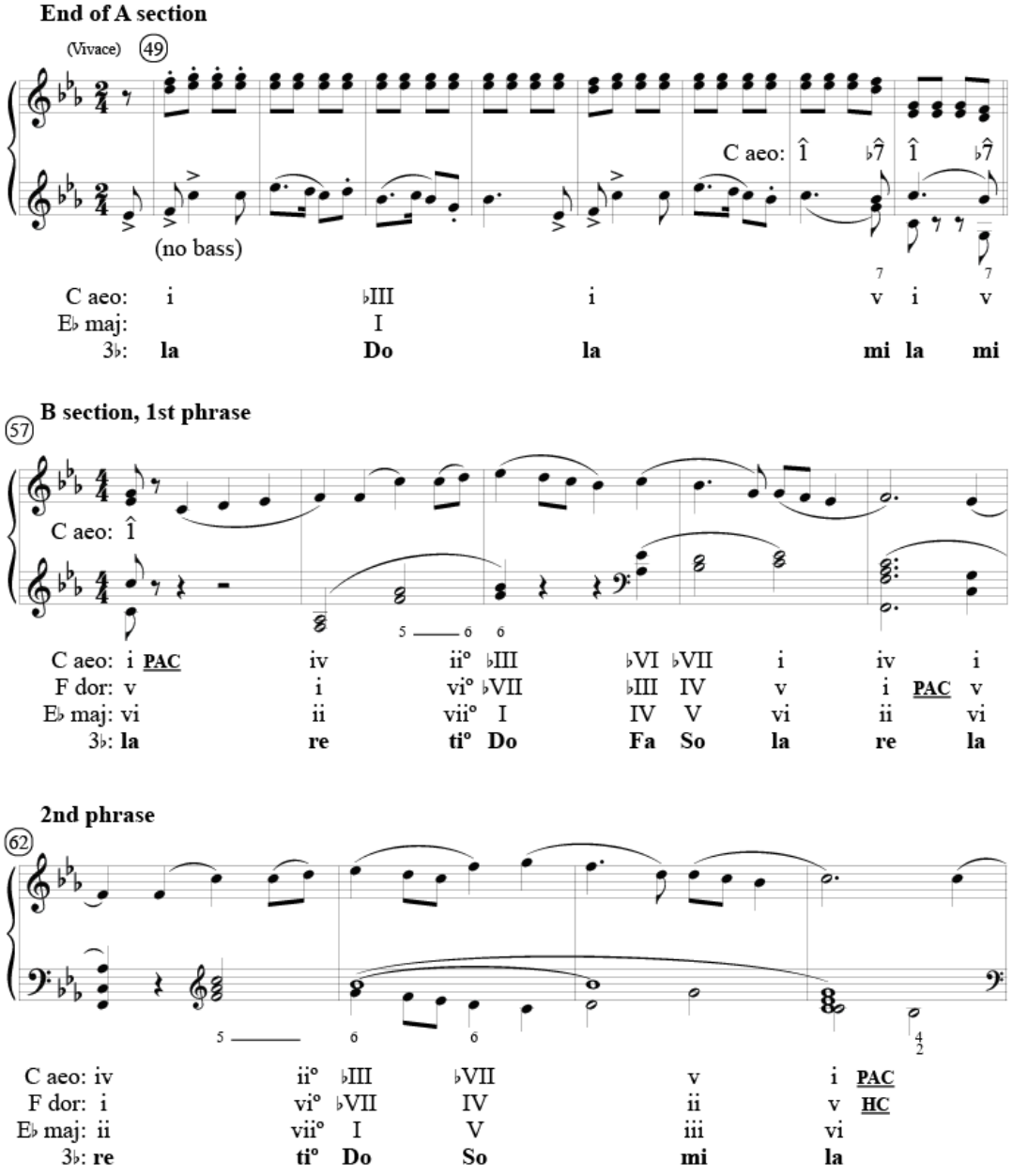
Holst's Deep Integration of Relative Modality

The creative use of diatonic positions is not confined to the single melody above (Examples 1.3–1.4). Holst actually saturates all levels of his First Suite with relative modality

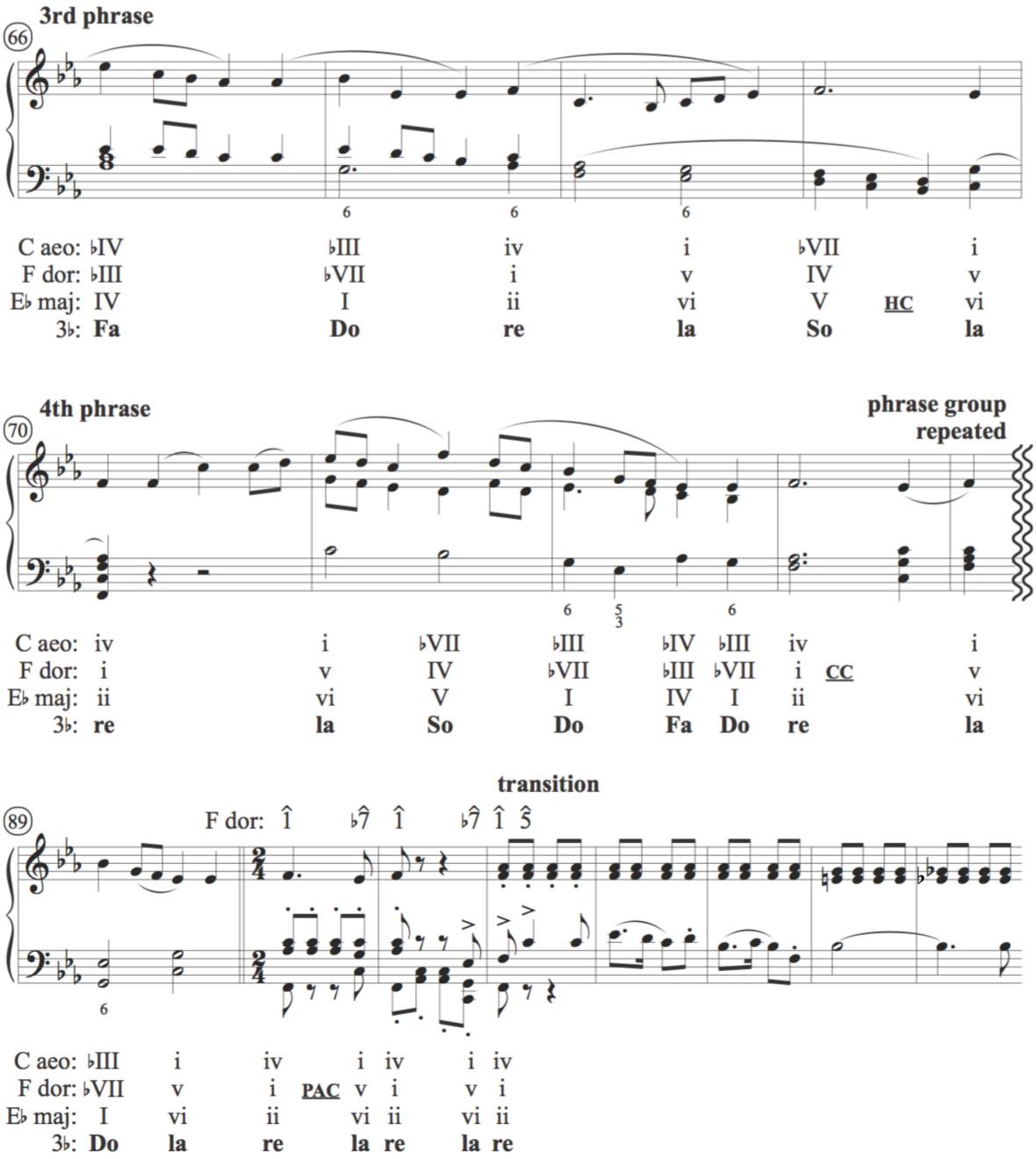
based on the **do-re-la** head motive. In Example 1.3, I have shown how Holst evokes F, C, and E♭ centricities within one phrase. The three centers in the Intermezzo's B section are actually the notes of the reoccurring head-motive in the entire First Suite (Example 1.5); as Holst describes, "each movement is founded on the same phrase" (quoted in Rapp 2005). This kind of relative-modal organization also pervades the entire B section of the Intermezzo, such that the three-note motive determines enclosing centricities at the phrase, sectional, and suite-wide level (Example 1.5).



Example 1.5. Holst, First Suite, do-re-la **motives across all movements.**



Example 1.6. Holst, First Suite, Intermezzo, B section (mm. 49–96).



Example 1.6, continued.

In Example 1.6, I show the entire dorian-enclosed B section of the Intermezzo, which is cast in a repeated AABA song form. The two AABA units open with **re** harmony in the first phrase (m. 58). The first AABA unit ends with ♭VII^{6}-i (m. 73), what I call a contrapuntal

cadence, or CC for short; the second AABA unit ends a repeated **la**-**re** PAC (m. 90–92). Each phrase closes on one of the three tonics heard in the first phrase.

As discussed, the first phrase is **re**-enclosed, but it evokes all notes of the motive as potential tonics. The second phrase begins in **re**, but the cadential material (mm. 64–65) is transposed up a fifth to end on **la**. Under normal circumstances, a modulation to its interior dominant is not noteworthy. However, since the first phrase can be heard entirely in C aeolian, the second phrase's more definite aeolian cadence could extend C aeolian's hierarchical status from the A section all the way to the B section's second phrase, bypassing the dorian enclosure of the first phrase entirely.

The contrasting third phrase ends with a melodic **do-re** (m. 69), but **re** is harmonized by a **So** chord. The **So**-ending in m. 69 could be heard as a B♭-mixolydian ending; but without any other supporting factors, the ending resembles a E♭-major half cadence more closely than B♭ mixolydian. The **So**-ending in m. 69 also raises an interesting question from a dorian perspective. If the first phrase's **re-**cadence could be heard as a subdominant stop in C aeolian, can F dorian have its own subdominant stop? Can **re**-on-**So** (m. 69) be heard not only as $\hat{2}$-on-V in the major mode, but also $\hat{1}$-on-IV in the dorian mode? The smooth transition back to the dorian-enclosed fourth phrase and the melodic parallelism certainly encourages such a possibility. In mm. 69–70, the **So-**chord continues to **la**-**re** in a dorian IV-v-i progression (this is the same progression as mm. 60–61), thereby reframing **So** as dorian IV. The melodic **do**-**re** at the cadence (mm. 68–69) is also the same as the first and last dorian cadence.

Even as the B section concludes, the cadential material (mm. 90–92) still offers alternative pathways for listening even though it is supposed to affirm the enclosing dorian tonic. First, Holst strongly asserts the dorian centricity via the repeated ♭$\hat{7}$-$\hat{1}$, or **do-re** melodic gesture

in mm. 90–91, which is transposed from **so-la** in mm. 55–56. Then, he borrows the A-section **do-re-la** theme (mm. 49), and harmonizes it with the **re** chord above instead of the original **la** chord (m. 92). Put another way, the $\flat\hat{7}$-$\hat{1}$ cadence is transposed and elided with the untransposed **do-re-la** theme, but reharmonized in a **re**-chord. Tonics based on melodic/thematic invariance, harmonization, cadences, enclosure, or scale will produce different results, and therein lies the experiential richness that is unique to relative modality.

At all levels of Holst's First Suite, he skillfully invokes many centers without ever changing the scale. Holst's recontextualization of the head motive attests to a hearing not based on scale degrees alone, but also in tandem with diatonic positions. Figure 1.2 at the beginning of this chapter summarizes the technical components of relative modality, which was merely sketched in an earlier "short definition" (p. 18). Now, from insights gained through the Holst analytical vignette, the deeper implications of relative modality are encapsulated in a "long definition:"

Relative modality (long definition) in diatonic-modally extended common-practice music juxtaposes one diatonic scale with many potential tone centers, forming a dual component of diatonic positions and scale degrees. The two components assert opposing yet complementary perspectives, one of a flat scalar hierarchy, one of absolute tonic hierarchy. Clarity characterizes the former; variety, mobility, and ambiguity the latter. Centricity is contextually defined, and there is an inherent major/minor-mode influence from common-practice harmony. Despite relative modality's scalar simplicity, major/minor influence creates relational complexity in relative and implied parallel key relations (Table 1.3). Relative modality calls attention to an additional scalar perspective that is conceptually distinct from but cognitively intertwined with centricity, creating yet another dimension for new musical possibilities and relational complexity

that major and minor modes alone cannot afford.

Chapter 2: Reicha's "New Harmonic System"[22]

Anton Reicha was one of the first nineteenth-century composers to extend common-practice music via strict diatonic modes without inflections. His modal theory, which I examine below, is made up of writings that date from 1799–1804, decades before most developments in diatonic modality took place. Alongside modes, Reicha discussed many other musical techniques far ahead of his time, including quarter-tones, polytonality, and asymmetrical meters.[23] In his experimental outlook, Reicha was for his time perhaps comparable to Vincentino or Harry Partch in theirs.

Although Reicha's theories never caught on, Reicha's modal theory gives us a glimpse of how a composer steeped in major/minor tonality and music of the Classical era would envision diatonic-modal composition. This important historical viewpoint is noticeably absent in treatments of the history of music theory, and the time period Reicha inhabits make his compositions and theory even more noteworthy. Only two decades later do Beethoven and Chopin explore the lydian mode (Chapter 3), and it was only at the end of the nineteenth century when Gregorian chant inspired compositions similar to Reicha's (Chapter 4).

Reicha wrote two diatonic-modal pieces: Practical Example No. 15 (1799–1803) and Fugue No. 13 from 36 Fugues, Op. 36 (1803–04), both with accompanying texts that theorize the techniques used.[24] These works showcase my dissertation's central subject—relative diatonic modality in modally extended common practice—in theory and in composition. Not only are they two of the earliest diatonic-modal pieces, but Reicha also included all six "consonant"

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[22] All translations in this chapter are mine.
[23] Reicha's Example Z3 No. 4 in his *Treatise on Melody* (2000, 45) contains quarter tones. Reicha superimposes B♭ major and D major in Practical Example No. 19; Practical Example No. 3 is a first-movement sonata in 5/8.
[24] For a critical overview of Reicha's experimentalism, especially in his fugues, see Noble 2013.

diatonic modes in each piece.[25] This kind of exhaustive organization scheme, running through all the available relative modes, brings to mind more famous pieces from the Renaissance and the twentieth century that do similar things—Ockeghem's *Missa Cuiusvis* ("Mass in Any Mode"), Josquin's *Missa L'homme armé super voces musicales* ("*L'homme armè* on [all hexachordal] Solfège Syllables"), and Shostakovich's Fugue in C major—but Reicha's pieces are significant in that they are explicitly derived from the language of common-practice harmony. Only in the twentieth century would the dissonant locrian mode became unlocked for compositional use (Chapter 6).

Figure 2.1 is a "map" of the theoretical and musical works relevant to my discussion of Reicha's modal practice in this chapter. Tall grey boxes show relevant theories, while horizontal white boxes show nested textual and musical works. Reicha's modal and fugal ideas make their first appearances in *Practical Examples: A Contribution to the Intellectual Culture of the Composer* (*Practische Beispiele ein Beitrag zur Geistescultur des Tonsetzers*), which remained in manuscript form until its publication in 2011. The examples are accompanied by *Philosophical-Practical Remarks to the Practical Examples* (*Philosophisch-practische Anmerkungen zu den practischen Beispielen*, henceforth *PPA*), and many ideas in *PPA* made their way into the forward-looking 36 Fugues, Op. 36, which was published in 1803–1804 (French) and 1805 (German).[26]

In a footnote to Fugue No. 13 in Op. 36, Reicha writes that it is composed after "*un nouveau systéme harmonique*," and directs his readers to the accompanying *Remarks upon the*

[25] The "dissonant" locrian mode is not included.
[26] The Practical Examples (without opus numbers), are reprinted as *24 compositions for piano* (New York: Georg Olms, 2011). I will refer to *RHS* by its corresponding page numbers (pp. 133–36) in the 1828 version of Op. 36, 36 Fugues, which is also reprinted in Noble 2013, 220–23.

Harmonic System after Which Fugue No. 13 is Composed (*Remarques sur le systéme de l'harmonie d'après lequel la fugue de Nro. 13 est composée*, henceforth *RSH*). In *RSH*, Reicha condensed the remarks on Practical Example No. 15 from *PPA* and excerpted music from the Practical Example. Both documents are short (*PPA* is seven pages long and *RSH* is four pages long) but they are nonetheless consequential for this dissertation; there are not many texts that describe diatonic modality from a common-practice perspective. Fugue No. 13 combines Reicha's modal experiments and his career-long efforts to modernize fugue for the nineteenth century—as shown by overlapping grey boxes in Figure 2.1.

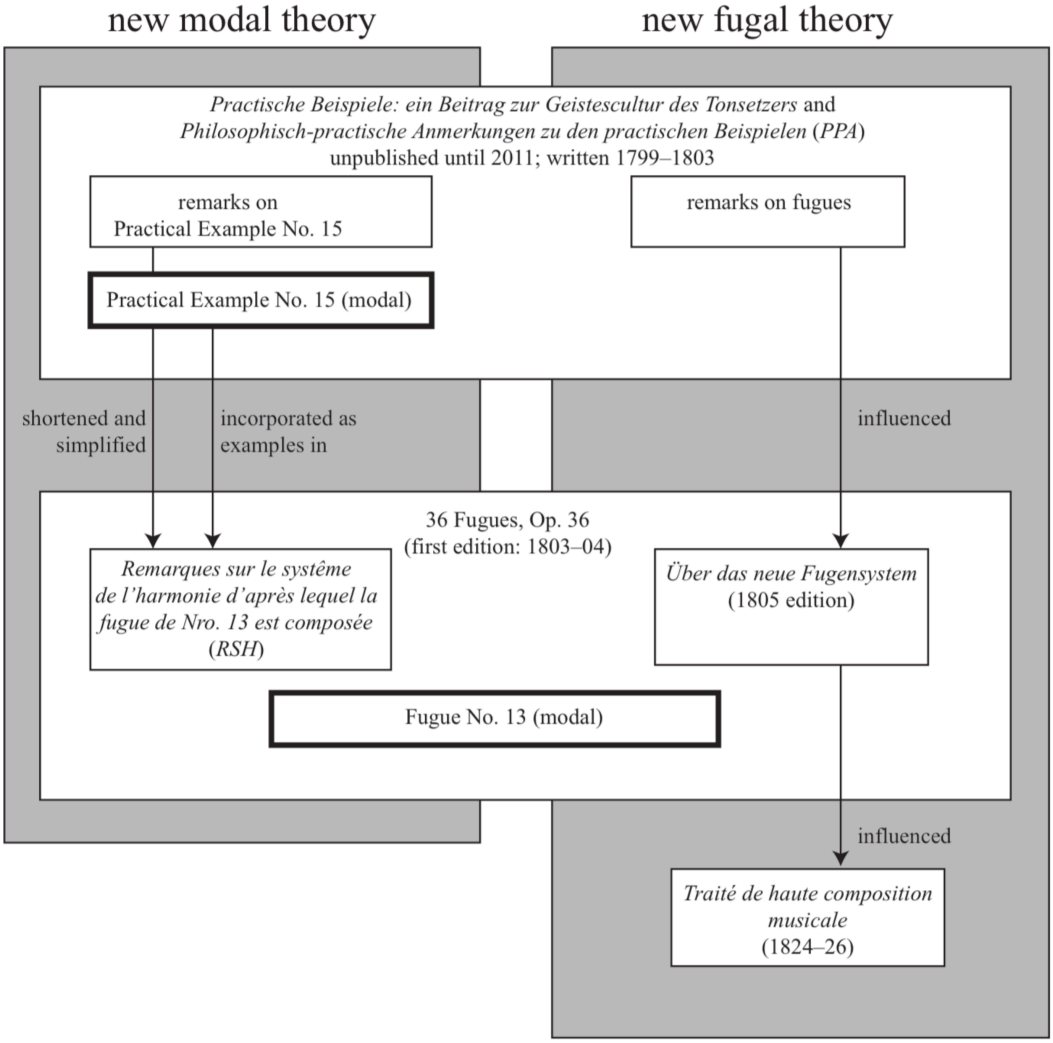

Figure 2.1. Theoretical and musical works by Reicha discussed in Chapter 2.

The remainder of this chapter is in four parts. Firstly, I will summarize *RSH*. Secondly, I will supplement the ideas in *RSH* by discussing the additional ideas contained in *PPA*. Thirdly, I will discuss the implications of Reicha's theory, arguing that Reicha's theory is a specific formulation of relative-modal tonicization embodied by a diatonic sequence. Finally, I will extend the connection I made between modes and sequences in my concluding analysis of Fugue No. 13.

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Remarques sur le systéme de l'harmonie…(*RSH*)

In the text that accompanies 36 Fugues, Op. 36, Reicha commented on only two of the most radical musical techniques used in the volume: diatonic modes used in Fugue No. 13 and 5/8 meter used in Fugues 20, 24, and 28. Although other fugues are no less creative, such as the fugue on one note (No. 18) or the enharmonic fugue I discuss later (No. 34), they still work within the confines of common-practice harmony. An examination of Reicha's commentary on Fugue No. 13 will show how he conceptualized diatonic modes and what topics he deemed relevant to contemporaneous musicians.

RSH discusses three main topics: (1) the diatonic transposition of cadences and scales (i.e., relative modes) to generate material (*RSH*, 133), (2) the prescription of relative major-mode endings (*RSH*, 133), and (3) the inflection of musical examples and scales by accidentals (i.e., parallel modes) (*RSH*, 134–36). The discussion of parallel modes in his commentary is a notable asymmetry between Reicha's theoretical and musical works, since his musical works do not explore parallel modes—they are limited to relative modes only.

Reicha begins his commentary by introducing the modal scales and cadential progressions (Figures 2.2 and 2.3) as diatonic transpositions of major-mode material. The transpositions show how he generates and conceives of music in these new modes: since they are diatonic transpositions, all scale degrees behave the same way that they would in the major mode.

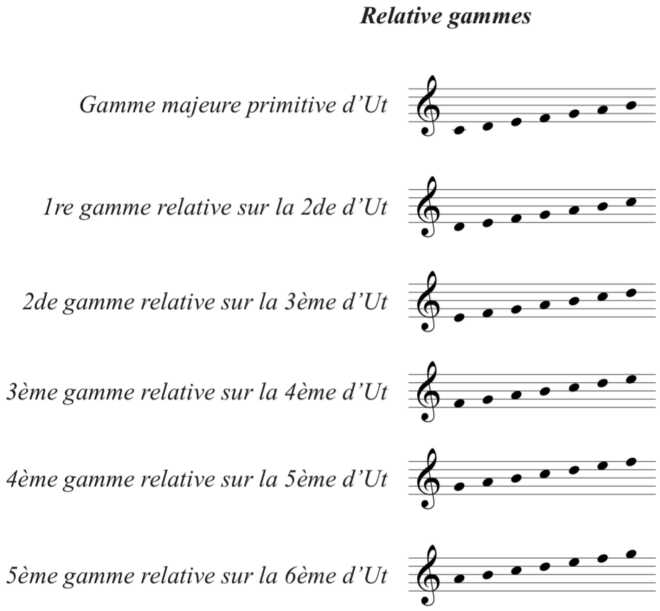

Figure 2.2. Reicha, presentation of relative modes (*RSH*, 133–34).

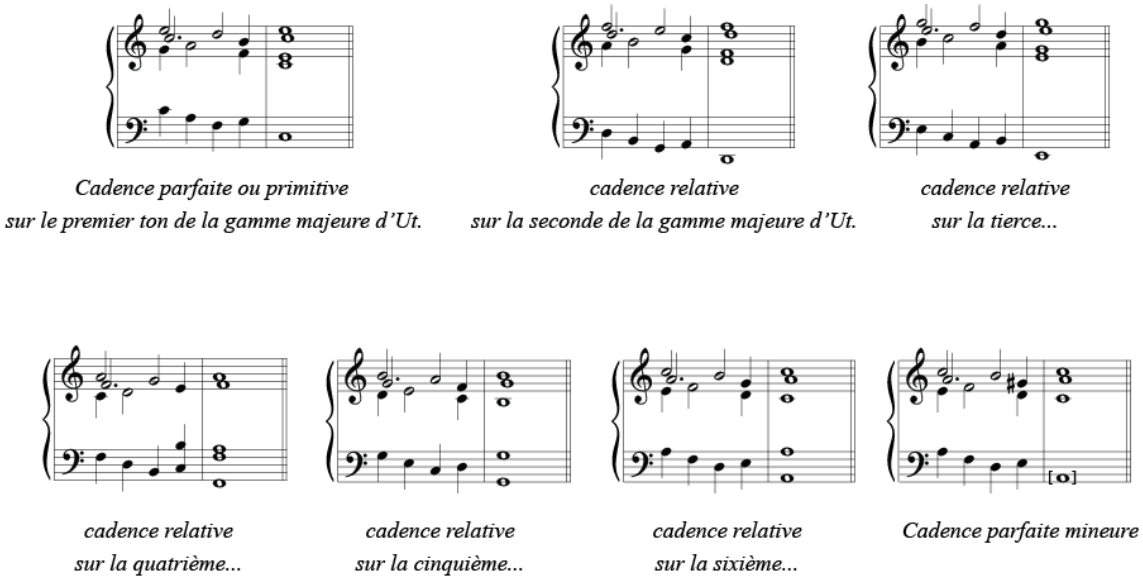

Figure 2.3. Reicha, presentation of modal cadences (*RSH*, 133).

Reicha's nomenclature in *RSH* (and *PPA*) (see Table 2.1) reflects the privileged status of relative, common-practice major/minor modes in his theory. He refers to common-practice modes as *gamme parfaite* (perfect scale) or *gamme primitive* (basic scale). All other modes are *gamme relative* (relative scales) numbered rather confusingly as the $(n–1)^{th}$ relative scale on the n^{th} scale degree of the relative major-mode tonic. For example, D dorian would be the first relative scale on $\hat{2}$ of C. Note that Reicha's theory does not directly engage with the common-practice minor mode, since it is not strictly diatonic. To access any diatonic mode, one would have to begin in its relative major mode.

In *RSH* (and *PPA*), Reicha never uses the terms "modes" or "diatonic," although he does use the nebulous term *ton*, which could mean tone, key, or mode. Reicha acknowledges that his system has "a great similarity to the one of ancient Greece, but it offers infinitely more benefits" (*RSH*, 133n). Perhaps the labeling scheme, then, is one way he distances his system from existing musical styles that uses Greek ethnic names (dorian, phrygian etc.), such as ancient Greek music, Gregorian chant, and Renaissance polyphony. It is somewhat ironic that Gregorian chant would later inspire a diatonic-modal liturgical style in French Catholic churches that continues to this day (Chapter 4).

Table 2.1. Modal terminology in *PPA* and *RSH*.

this dissertation	*RSH* (French)	*PPA* (German)
major mode	*gamme majeur* *gamme parfaite* *gamme primitive*	*Haupttonart*
minor mode	*gamme mineure* *gamme parfaite* *gamme primitive*	
non-major modes	*gamme relative*	*Nebentonart*
dorian	*1re gamme relative sur la seconde ton*	*esrten Nebentonart*
phrygian	*2de gamme relative sur la troisième ton*	*zweiten Nebentonart*
etc.	etc.	etc.

Coupled with his modal nomenclature, Reicha's single compositional prescription cements major mode's background hierarchical status: pieces must end in the relative major mode, because all other diatonic modes "always leave more phrases to be desired" (*RSH*, 133). Although his prescription addresses major-mode endings, his modal music and additional examples in *PPA* also contain major-mode openings. By pairing openings and endings in the same key, his major-mode enclosures further reinforce the background hierarchical status of the major mode. As Chapter 3 will show, Beethoven's lydian ending in his *Heiliger Dankgesang* does indeed leave more phrases to be desired; but such an ending can also serve a unique dramatic effect not attainable with conventional cadences.

Unlike his musical works, which only use relative modes, the text of *RSH* includes equal amounts of material on relative modality and on parallel modality. After relative modes, Reicha provides the scalar abstraction of parallel modes (Figure 2.4) to show how context determines what the tonic is. As he writes, "[t]he relative scales are simultaneously basic scales, just as the basic major scale is simultaneously a relative scale. It all depends on the manner that one considers and employs them" (*RSH*, 134).[27] Although his parallel keys all share the same tonic C, the label of each scale still refers to the relative major, and C is not actually mentioned beyond the major mode. For example, his third *gamme relative* is in C lydian, but nowhere in the labeling is the local tonic C mentioned. Rather, C has to be reckoned from the label "third *gamme relative* on $\hat{4}$ of G major." Put another way, all non-major modes refer to their relative major modes, even in situations (such as Figure 2.4) where parallel modes are juxtaposed explicitly. In short, the labeling system reflects the centrality of relative modes in his theory.

[27] "Les gammes relative sont en même tems des gammes primitives, de même que la gamme majeure primitive est en même tems une gamme relative."

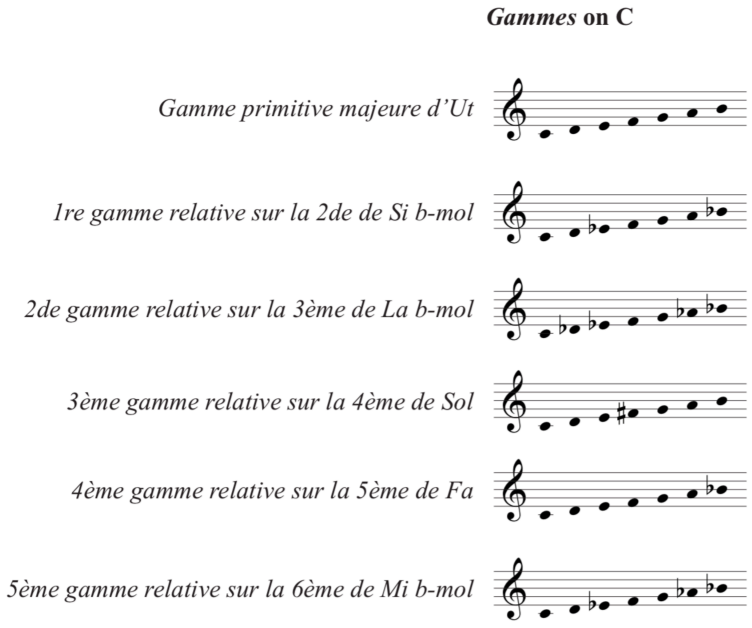

Figure 2.4. Reicha, presentation of parallel modes (*RSH*, 135–36).

After introducing the concept of parallel modes, Reicha excerpts the second and third themes from Practical Example No. 15 in different parallel modes to demonstrate the "entirely new and sentimental character" (*RSH*, 134) of different modes.[28] (Figure 2.5 shows the opening of the third theme in varied parallel modes.)

After the parallel-mode passages, Reicha concludes *RSH* with a call for others to do further work developing this new diatonic-modal "system":

"It is reserved for the philosophers and the geniuses who will follow our time to draw on all the consequences of this important system together with the composed measures and their use; but the subtleties of a conventional taste, ignorance and prejudice, so fatal to the progress of the arts, and which are the necessary accompaniments of little minds, will oppose it for a long time" (*RSH*, 136).[29]

[28] "Ces deux exemples d'un caractére tout-á-fait neuf et sentimental, ne peuvent se rendre que par ces deux gammes relatives."

[29] "Il est reservé aux philosophes et aux genies qui suivront l'époque ou nous sommes de tirer toutes les consequences de ce systéme important, ainsi que des mésures composèes et de leur emploi ; mais la subtilité d'un gout conventional ; l'ignorance et les préjugés, si funestes aux progrès des arts, et qui sont l'appanage de petits esprits, s'y opposeront bien longtems."

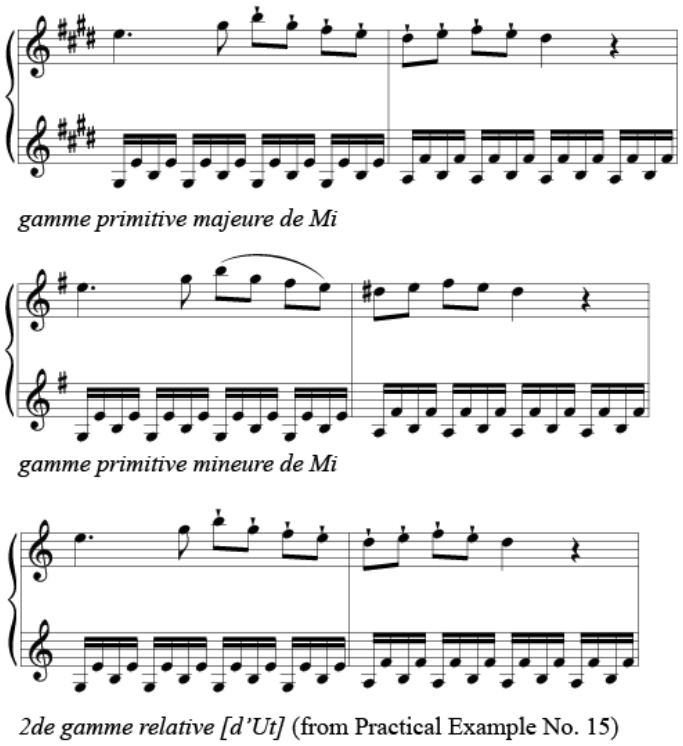

Figure 2.5. Reicha, music related by inflection (*RSH*, 134–35).

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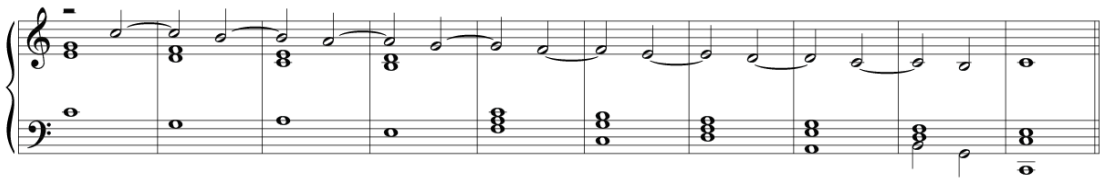
Philosophisch-practische Anmerkungen… (*PPA*)

The three topics covered in *RSH*—transposition, major-mode endings, and the comparison of parallel modes—have roots in Reicha's earlier *PPA*. But the discussion of modes in *PPA* is structured quite differently from *RSH*, and it supplies additional insights into the reasoning behind Reicha's comments in *RSH*. At the outset of *PPA*, Reicha writes that the goal of his modal theory is to introduce "the nature and application of the five so-called *Nebentonarten* as a second resource to enrich art" (*PPA*, 134).[30] *PPA* discusses five main topics: (1) the comparison of relative-modal modulation and diatonic sequences (*PPA*, 192–94), (2) the

[30] "Die Natur und weise Anwendung der sogenannten fünf Nebentonarten, als ein zweites Mittel die Kunst zu bereichern."

diatonic transpositions of all cadences and scales (*PPA*, 194–98), (3) the prescription of major-mode endings (*PPA*, 198–200), (4) the types and combinations of modulations (*PPA*, 200–202), and (5) the differences between Reicha's theory and Renaissance modal polyphony (*PPA*, 202–204).

Reicha uses the sequence in Example 2.1 to demonstrate how all scalar members and—by extension—relative-modal tonics are already built into the major key. He writes that "[s]ince […] no tone of the major scale of C is foreign to emotion, then, no relation (*Verbindung*) of these tones […] can appear foreign to it. This can be seen from the following phrase," reproduced in Example 2.1 (*PPA*, 194).[31]



Example 2.1. Reicha, diatonic sequence (*PPA*, 196).

The connection Reicha makes between relative-modal tonics and diatonic sequences is somewhat vague, but the crux of this passage lies in the word "foreign." Just as all tones belong to C major, so do all modal tonics and their tonic triads (except for the dissonant locrian mode). The diatonic sequence (as shown in Example 2.1) is a systematic and simple way to access all diatonic chords and expand a simple I-V^7-I progression. The diatonic sequence, then, can also function as an analogy for diatonic modes. Like the sequence, diatonic modes represent a way to

[31] "Da nun dem Gefühle in solchem Falle kein Ton der harten Scala von C fremd ist: so kann ihm auch keine Verbindung dieser Töne (folglich auch kein Accord der durch dieser Töne möglich ist) fremd vorkommen. Dieses kann man z. B. aus folgendem Satze ersehen: [my Example 2.1]."

explore all diatonic triads and expand the space between opening and closing tonics. As I will argue later, Fugue No. 13 takes this sequential analogy literally.

After the sequence analogy, Reicha introduces all modal scales and cadences, and he prescribes that only "perfect cadences" (*vollkommenste Schluß*) can close entire pieces because the dominant seventh alone contains the proper intervals for closing (*PPA*, 198). We may surmise that his comments in *RSH* about non-major/minor cadences leaving "more phrases to be desired" (*RSH*, 133) is a result of the comments in *PPA*: intervals characteristic of conventional cadences like the tritone are absent.

Two sentences in *PPA* capture one of the basic premises of Reicha's theory: that "secondary" (non-major/minor) keys are hierarchically subservient to "primary" (major) keys. He writes,

> "[t]he secondary keys serve to vary the primary key, which they also properly convey when they are appropriately used. The way in which such a piece is composed is not unlike that which is handled in every other musical development: take the feeling as a guideline, treat the secondary keys as primary keys; turn it around when the feeling demands an alteration of the key; and close the whole thing in the primary key of the piece" (*PPA*, 200).[32]

Note that, to access any non-major/minor diatonic mode, one would have to close in its relative major mode. Even when Reicha brings up examples in the minor mode and examples in scales other than 0♮, he does not elaborate on how they can be used in conjunction with each other. In *PPA*, however, he spends considerable time on all the combinations of these key relations. In line with the rationale of his modal theory—to create musical variety—he argues

[32] "Die Neben-Tonarten dienen der Haupt-Tonart zur Mannigfaltigkeit, die sie auch gehörig befördern; wenn sie richtig angebracht werden. Die Art ein solches Tonstück zu verfertigen ist in nichts von derjenigen verschieden womit man eine jede andere musicalische Ausarbeitung behandelt: Man nehme das Gefühl zur Richtschnur; behandle die Neben-Tonarten wie Haupt-Tonarten; wende sie da an, wo das Gefühl Abänderung der Tonart fordert; und schließe das Ganze in die Haupt-Tonart des Stücks."

that options for cadencing in the major/minor system are too limited, and his theory provides far more options. For example, he laments that there are only two types of cadences in one key, full and half: "Each secondary idea closes in the same way as if the whole were closed with it. This obviously creates great monotony" (PPA, 200).[33] Then, beginning with familiar common-practice keys, he introduces six types of relations (Verbindungen) between key areas that increase in variety. The possible combinations are:

(1) minor keys only,

(2) primary (major) keys only,

(3) primary and minor keys,

(4) one primary key and its five secondary keys,

(5) several primary keys with their secondary keys, and

(6) the combination of (3) and (5) (*PPA*, 202).

PPA closes with remarks on how his system differs from Renaissance modes. These are, specifically, the availability of twelve transpositions, major-mode closure, the six combinations above, new types of cadences such as the phrygian **ti^{o}-mi**, and access to the modern style (*PPA*, 202–204).

The two texts discussed above establish the core principles of diatonic transposition and relative major-mode endings. In the more condensed, published form of Reicha's theory, *RSH*, more time is spent on parallel inflections and the comparison of modes. By contrast, *PPA* includes more detail and represents the origin of most of the ideas in *RSH*. In *PPA*, Reicha situates his theory as one of tonic and cadential variety, and it includes remarks on his theory's

[33] "Jeder Nebengedanken schließt auf eben die Art als würde das Ganze mit ihm geschlossen. Dieses verursacht offenbar im Ganzen großen Monotonie."

connection with diatonic sequences, differences between his theory and Renaissance modes, and how he envisions that diatonic modes should appear alongside other types of modulations.

Although no known musical works by other composers were written directly as a result of Reicha's theory, the insights that guided his speculative theory remained largely true for music in the decades that follow. Relative-modal tonicization remains a powerful analytical tool that acknowledges a background hierarchy without scalar shift. Major/minor-mode endings remain paramount for tonic stability; not having them is to open an aesthetic Pandora's box that Reicha was not yet ready to explore. Diatonic transposition of major-mode passages retains generic intervals (such as the V-I cadence in different modes), a technique that remains useful for establishing a conventional sense of centricity. As Reicha speculated in *PPA*, later composers also found a myriad ways to combine non-common-practice modes with common-practice ones, such as the chromatic mediants featured in Beethoven's (Chapter 3) and Vaughan Williams's (Chapter 5) works, the combination of modal diatonicism and chromaticism in Chopin's (Chapter 3) and Shostakovich's (Chapter 6) works, and the "closely related" keys one key signature apart in Gregorian tonality (Chapter 4).

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Relative Modality in Reicha's Theory and Practical Example No. 15

Reicha never christened his modal theory; the closest description is "*Nebentonarten*" in *PPA* and "*un nouveau systéme harmonique*" in the footnote to Fugue No. 13. His theory is best described as one of *relative-modal tonicization* (a concept introduced in Chapter 1) with the component parts *diatonic transposition* and *relative major-mode closure*; the former a way to conveniently generate music in all modes, and the latter a way to prevent inconclusive endings.

Through an analysis of Practical Example No. 15 below, I will make explicit the implications of Reicha's theory, and I will extend Reicha's theory by proposing a revision to his sequence analogy.

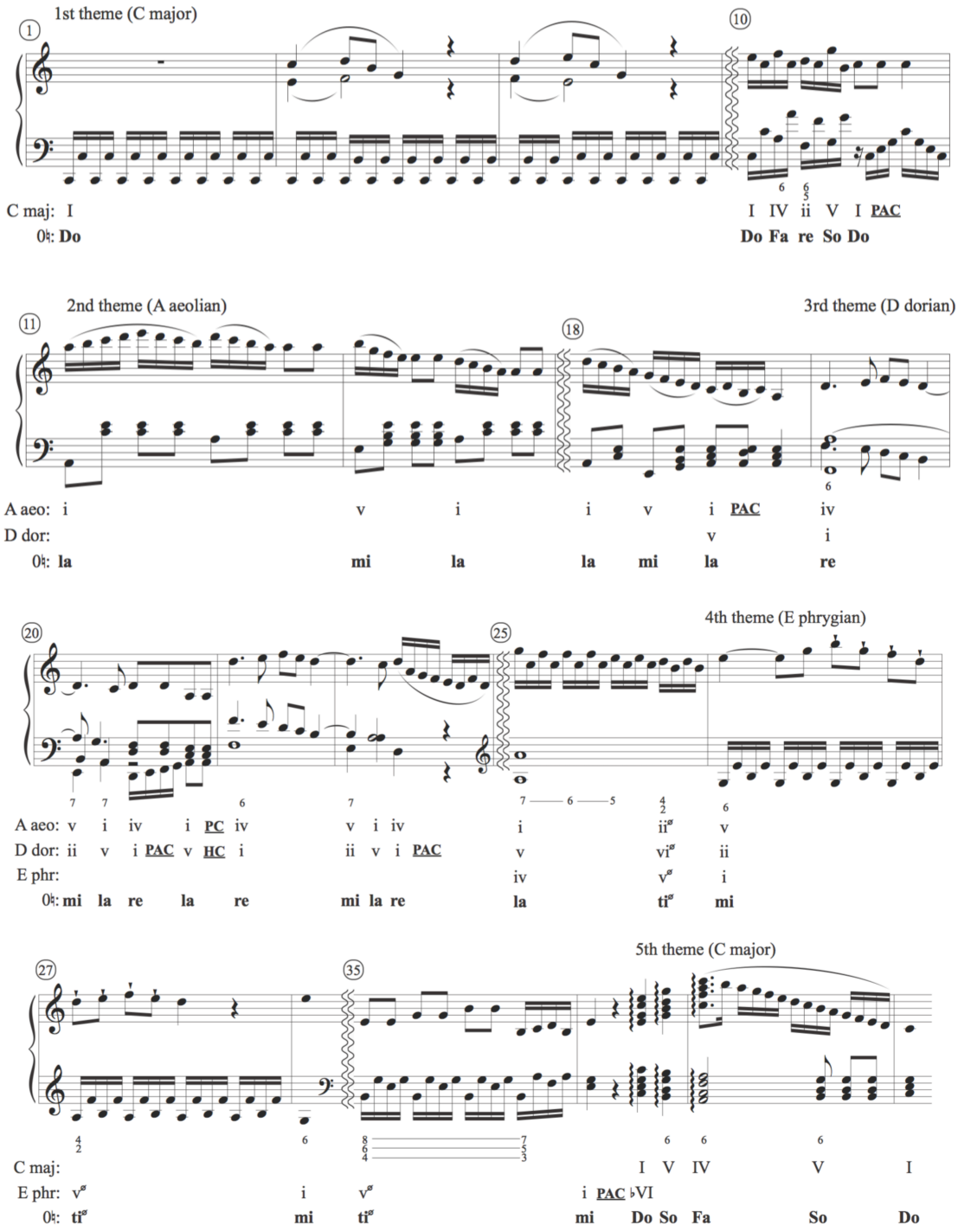
Diatonic Transposition in Practical Example No. 15

Practical Example No. 15 (Example 2.2) takes the form of a medley of themes in different modes within a C-major enclosure (Table 2.2). Reicha opens his description of the Practical Example as follows:

> "[t]he most striking thing is that in this Allegro, from beginning to end, no tone is lowered by a flat or raised through a sharp. To give an Allegro of this extent sufficient variety without touching a single tone other than the tonic scale? To modulate (*ausweichungen*) to A, D, E, F, and G, without raising or lowering a single tone?" (*PPA*, 192–194).[34]

It is clear from both *RSH* and *PPA* how Reicha would have generated modal variety without changing the scale—by writing phrases in C major and transposing them at different intervals (in a similar fashion to Figures 2.2 and 2.3). As a result, all themes in Example 2.2 have typical harmonic progressions such as I-V-I or I-II-V-I in their respective modes (e.g., an aeolian i-v-i in m. 18, a dorian i-ii^{7}-v-i in mm. 23–24) and certain modes feature chords and chord progressions that are otherwise rare in the major mode, such as **ti**^{ø7}**-mi** in the phrygian v^{ø7}-i progression (mm. 35–36).

[34] "Das auffallendste ist, daß in diesem Allegro von Anfang bis zu Ende kein Ton weder durch ein b erniedrigt, noch durch ein # erhöht ist. Einem Allegro von diesem Umfange hinlängliche Mannigfaltigkeit der Accorde zu geben, ohne einen einzigen Ton außer der Scala der Tonica zu berühren? Ausweichungen nach A, nach D, E, F und nach G zu machen, ohne einen einzigen Ton zu erhöhen oder zu erniedrigen?" See Saslaw 2003 on the nebulous meaning of *Ausweichung*.



Example 2.2. Reicha, Practical Example No. 15 (mm. 1–38).

Table 2.2. Reicha, Practical Example No. 15, formal organization.

C-maj opening	minor-mode tonics			major-mode tonics			C-maj ending
	A aeo	D dor	E phr	C maj	F lyd	G mix	
1st theme	2nd th.	3rd th.	4th th.	5th th.	6th th.	transition	1st th. and coda
m. 1	m. 11	m. 19	m. 26	m. 37	m. 45	m. 55	m. 60

Given the centrality of relative modes in Reicha's system, the parallel-mode examples in *RSH* (Figure 2.5) sit uncomfortably within his theory. To use all three keys in Example 2.5 (E phrygian, E minor, and E major) according to Reicha's theory, the composer would have to enclose E phrygian with C major (in the manner of the Practical Example), and then modulate separately to E major and E minor. (This would be the sixth kind of key relation outlined in *PPA*.) Reicha uses Figure 2.5 to demonstrate the different musical character that modes impart, and I suspect he used parallel keys because they more readily expose similarities and differences between different modes. Put another way, Figure 2.5 hints at *common-practice resemblance* (Chapter 1), a crucial determinant for tonic-finding. As Figure 2.5 and the transpositions of cadences (Figure 2.3) demonstrate, non-major modal music can be derived most directly from two sources, its relative major/minor or parallel major/minor. For example, Reicha may have derived the E-phrygian passage in Figure 2.5 by transposing C-major material up a third (in the manner Reicha transposes his scales and cadences in Figures 2.2 and 2.3) or he could have written E-major or E-minor music and removed all the sharps (as he did so in Figure 2.5).

All of Reicha's modal music maximally resembles common-practice counterparts, and composers such as Beethoven and Chopin (Chapter 3) also adhere to a similar compositional strategy. But it is important to recognize that this need not necessarily be the case in other composers' music. For example, a mixolydian ♭VII-I cadence would resemble an atypical common-practice vii°-I. But because Reicha generates all his relative-modal material by diatonic transposition, Figure 2.5 actually makes it explicit that diatonically-transposed passages (C major

to E phrygian) also maximally resemble their parallel major/minor counterpart (E phrygian to E major).[35] In other words, diatonic transposition and inflection can generate transpositionally equivalent passages.

Perhaps the property of transpositional equivalence is not so surprising, since scalar abstractions also work the same way (Figures 2.2 and 2.4). But parallel modes provide an additional associative pathway in the analysis of Reicha's works. By adding a minimal amount of accidentals (e.g., E phrygian to E minor, as Figure 2.5 suggests), one can recompose Reicha's non-major-mode passages in their parallel major or minor mode to show their origin in common-practice harmony. Table 2.3 shows, in modal key space, the parallel common-practice modes requiring the least amount of inflection. Reicha's modal tonicizations of D dorian, A aeolian, E phrygian, F lydian, and G mixolydian are not only on the same row (sharing the same key signature) as C major, they also maximally resemble common-practice keys D minor, A minor, E minor, F major, and G major, respectively (which are the closely related keys of C major). Adding these extra inflections clarifies scale-degree functions within more familiar common-practice modes, but doing so sacrifices centric ambiguity and smooth modulation inherent in relative modes. Nonetheless, the suggestion of eleven different keys within 0♮ speaks to the relational richness of relative modality.

Table 2.3. Relative modes of C major and their parallel major and minor keys.

	F	C	G	D	A	E	B
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
1♯	(F♯ loc)	C lyd	G maj	D mix	A dor	E min	E aeo	B phr
0♮	**F lyd**	**C maj**	**G mix**	**D dor**	A min	**A aeo**	**E phr**	(B loc)
1♭	F maj	C mix	G dor	D min	D aeo	A phr	(E loc)	B♭ lyd
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

[35] The systematic transformation of diatonic material is captured in Hook's group-theoretical work (2008).

The Background Relative Major Mode in Practical Example No. 15

To Reicha's ear, cadences in non-major/minor modes sounded inconclusive, so he suggested a critical restriction on the use of non-major/minor mode cadences: pieces cannot end with them. Cadences on all other relative modes only "serve to vary" the major mode (*PPA*, 200), and this use of diatonic modes is reflected in his labeling terminology. (For example, the phrygian mode is referred to as the *2de gamme relative sur la troisième ton* in *RSH*.) Given that musical variety is a core value for Reicha's musical experiments, more cadential options at endings ought to create even greater variety to "enrich art" (*PPA*, 134). Yet, Reicha prioritizes conclusiveness over variety. As later chapters in the dissertation will explore, many pieces that end with non-major/minor mode tonics also end inconclusively. Under the strong influence of common-practice music, a listener may in some situations automatically attach major or minor mode scale degrees to a scale regardless of the final. And, beyond the matter of cadential finality, Reicha may have wanted to avoid centric ambiguity and the paradoxical implications of open structure at a piece's end.

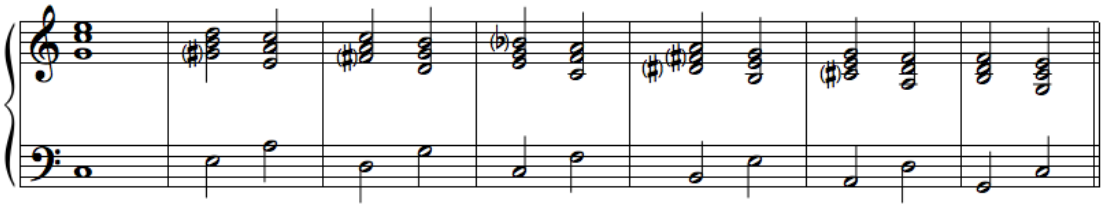
We can perceive such centric instability in the dorian theme of Practical Example No. 15. Leading into the dorian section (m. 18), **la** serves double function as aeolian i and dorian v. Like the dorian mode in Holst's Intermezzo (Chapter 1), the aeolian tonic persists throughout Reicha's first dorian phrase (mm. 19–20). Only the seventh chords (**mi**^{7} and **la**^{7}) followed by a consonant **re** (m. 20) hint at the dorian mode. A piece that ended on the dorian tonic here could imply an ending on major-mode ii or aeolian iv. Chapter 5 in particular examines folk-song inspired cadences on **re** that imply potential off-tonic endings.

The prescription of major-mode closure circumvents some of the more radical features of relative modality and provides a source of background hierarchy and stability in composition and

in theory. This theoretical move fuses elements of major-mode scale degrees and diatonic positions together, essentially mandating a background relative major-mode interpretation of each diatonic position. In this dissertation's terms, his theory is one of relative-modal tonicization (Chapter 1) within a major mode. Chapter 3 will examine an alternative strategy—Schenker's strategy, specifically—for reining in modal inconclusiveness by asserting a *background parallel* major-mode interpretation.

Extending the Sequence Analogy

I will summarize my reading of Reicha's theory described in the paragraph above by extending his sequence analogy previously reproduced in Example 2.1. Recall that Reicha's sequence analogy from *PPA* was made directly in connection with Practical Example No. 15, and that he used the A-aeolian and E-phrygian themes from the Practical Example to show the effects of different inflections. Therefore, to clarify and crystalize my reading of Reicha's theory through Practical Example No. 15, I propose the *diatonicized applied-chord sequence* (Example 2.3) as a combination of the sequence in *PPA* (Example 2.1) and the parallel-modal inflections in *RSH* (Figure 2.5).



Example 2.3. Diatonicized applied-chord sequence.

Following Reicha's sequence in *PPA*, my sequence (Example 2.3) begins and ends on the tonic with several transpositions therein. Therefore, it satisfies the two component parts of

Reicha's theory: major-mode closure and diatonic transposition. To make clear that the consonant chords within the sequence (**la, so, fa, mi, re**) can act as local modal "tonics," the parenthetical inflections imply their newly gained tonic status through maximal common-practice resemblance. In this way, Example 2.3 models the way I analyzed Practical Example No. 15. Relative-modal tonicizations and their boundaries can be fuzzy at times; adding the hypothetical accidentals clarifies the otherwise ambiguous scale-degree functions of relative modes.

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Fugue No. 13 as a Sequence

I suggested above that Reicha used the sequence as an analogy for any consonant chord within the diatonic scale serving as a tonic, and I proposed an extention of this analogy, that sequences also embody the essential components of Reicha's theory: major-mode closure and diatonic transposition. In this section, I argue that sequences in general permeate every level of Fugue No. 13. By "sequence," I also mean successive transpositions of larger units that may contain multiple chords or an entire phrase.

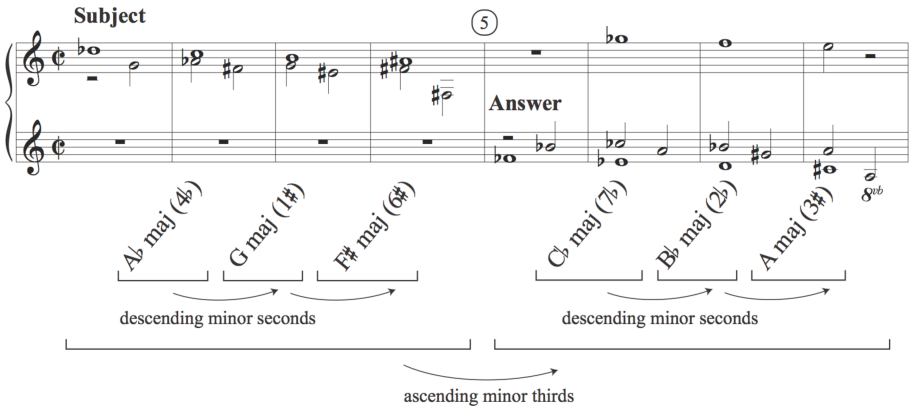
In Fugue No. 13, Reicha's experimental fugal theory and modal theory go hand in hand. His conception of the modern nineteenth-century fugue has origins in *PPA* (Raymond 2014), and it is later published in the text *Über das neue Fugensystem*, which accompanied the German edition of 36 Fugues (1805). In the new fugal theory, he intended to modernize the fugue by adapting it to a contemporaneous style of expression. Two aspects of the new fugal theory are most relevant to Fugue No. 13. Reicha loosened the tonal plan of the fugue by allowing answers at any interval, and he also allowed subjects of any style, including symmetrical and balanced

phrase structures of the galant style. Reicha would later discuss the use of phrase structure in fugues more thoroughly in *Traité de haute composition musicale* (1824–26) as *fugue phrasée*. Because of the heavy borrowing from galant style, many of Reicha's fugues also had a relatively homophonic texture instead of linear polyphony. The loosened rules threated the identity of a fugue, such that Beethoven wrote that Reicha's work "consists in fugues not being fugues" (1996, 145).[36] One can only wonder what Beethoven might have thought of Shostakovich's fugues, which still feature dominant answers but include locrian-mode middle entries and locrian-mode subjects (Chapter 6)!

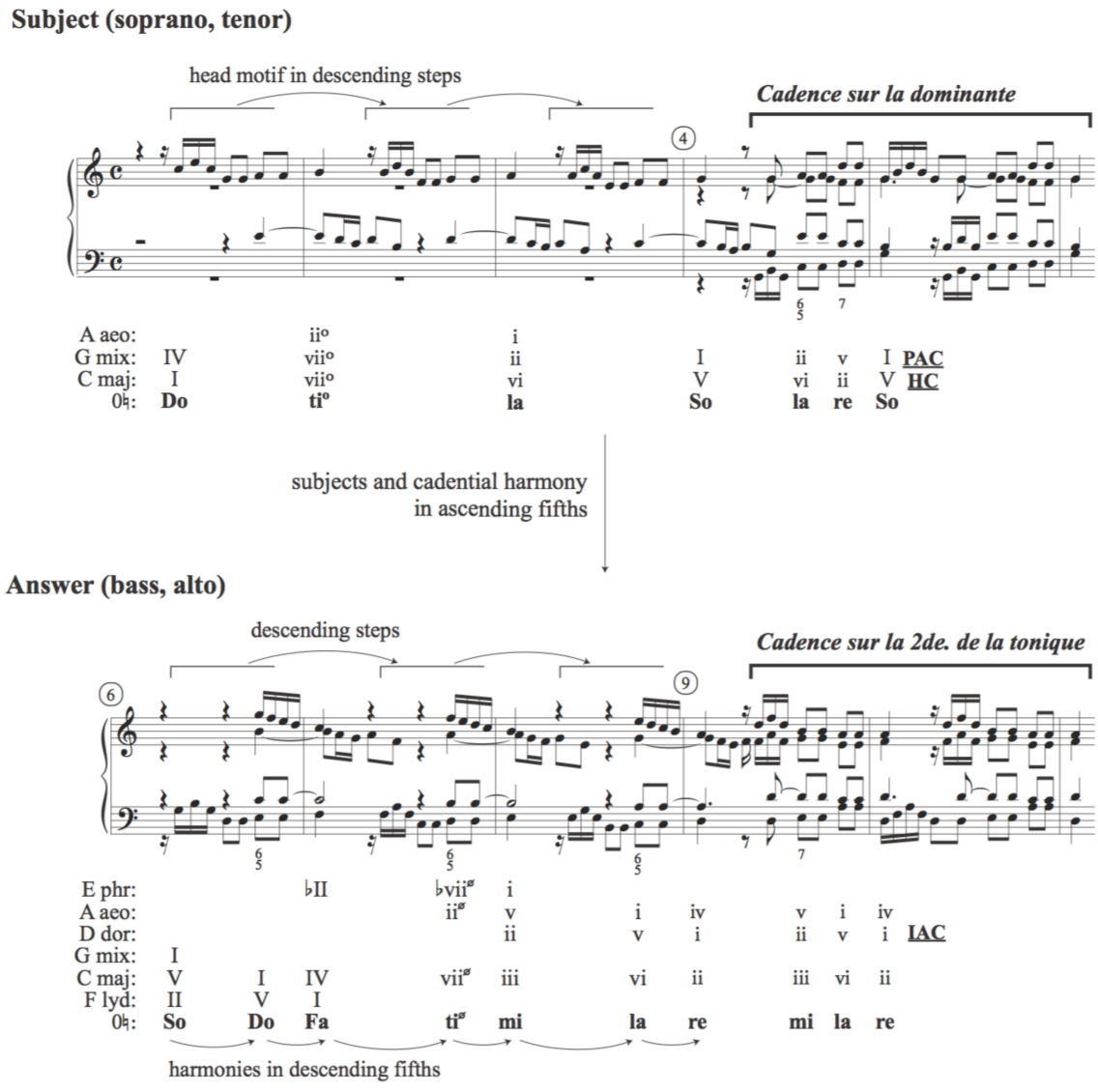
Comparison of a Chromatic and a Diatonic Fugue

In 36 Fugues, Reicha took advantage of the new found freedom to explore fugal answers at sequential intervals instead of alternating tonic and dominant keys. For example, in Fugue No. 8, answers (which were alternately inverted) cycle through key areas in descending fifths (D, G, C, F, B♭ etc.). In Fugue No. 25, the entrances in the exposition form a major-third cycle (D, B♭, F♯, D), which anticipated the use of third-related thematic sequences to undermine classical form (Dahlhaus 1980, 45–64). The single diatonic-modal Fugue No. 13's inclusion among many other chromatic-sequential fugues suggests an easily overlooked commonality between relative modality and extreme chromaticism. To demonstrate, I will compare the openings of the extremely chromatic Fugue No. 34 (Example 2.4) and the diatonic-modal Fugue No. 13 (Example 2.5), after which I will examine the background structure of Fugue No. 13.

[36] Letter from 18 Dec. 1802 addressed to Breitkopf in Leipzig.



Example 2.4. Reicha, 36 Fugues, Op. 36, Fugue No. 34, mm. 1–8.



Example 2.5. Reicha, 36 Fugues, Op. 36, Fugue No. 13, mm. 1–10.

Both Fugue No. 34 and No. 13 feature an overabundance of tonics resulting from the plentiful use of sequences. Sequences in the two fugues only differ by the kind of transpositional interval at work: Fugue No. 34 features chromatic transpositions by specific intervals, Fugue No. 13 diatonic transpositions by generic intervals. The double subject of the chromatic fugue contains an internal sequence that transposes a tritone resolution by descending semitones. A descending octave leap punctuates the subject's ending.

By contrast, the double subject of the diatonic-modal fugue contains an internal descending step sequence. A double cadential progression concludes the subject, with the main subject (soprano) articulating the chord roots $\hat{1}$-$\hat{2}$-$\hat{5}$-$\hat{1}$ of the cadential progression (G-A-D-G, in G mixolydian, in mm. 4–5). The chromatic fugue's answer enters at a minor third above, pivoting on the enharmonically respelled A♯/B♭ (mm. 3–4). By contrast, the diatonic fugue's answer enters a fifth higher, pivoting on G (m. 6); the answer's sixteenth-note upbeat (G-B-G, m. 6) is foreshadowed in the bass (m. 4). In both fugues, the respective minor-third and fifth-transpositions continue on in the exposition.

The two fugues above exemplify two main aspects of Reicha's *neue Fugensystem*: the loosening of answering intervals and clear phrase grouping (*fugue phrasée*). Enabled by non-dominant answers, the two fugues explore sequential and modulatory complexity rather than demonstrations of polyphonic prowess. The diatonic fugue, however, goes one step further: it also illustrates the diatonic transpositions of Reicha's *nouveau systéme harmonique.*

In chromatic and diatonic-modal spaces, sequences (and transpositions in general) interact with centricity in different ways. In the chromatic fugue's subject, each semitonal transposition from A♭ major to F♯ major moves the local tonic and the diatonic scale with it, both of which are implied by the position-finding tritone and its resolution. The subject's F♯-

major closure is reinforced by the descending octave leap (m. 4). The quick succession of tonics makes the global key unclear.

In the modal fugue, tonics are independent of transposition. The first cadence of the modal fugue is in the global dominant (m. 5, repeated in m. 6), which is labeled *cadence sur la dominante* in the score (but *quartième cadence relative sur la cinquième tone* in the accompanying text *RSH*). It can be heard as either a C-major HC or a local mixolydian PAC. In contrast to the chromatic fugue, the diatonic sequences of the modal fugue do not necessarily move the tonic: tonic status depends on the common-practice resemblance of each sequential segment, with major/minor influence playing a strong role. A case in point is the first stepwise transposition, as the opening **Do**-chord (m. 1) moves to an unstable **ti^{o}**-chord (m. 2). Rather than moving the C-major tonic to a highly unlikely B-locrian one, the tonic probably stays put, and transposition moves the scale degrees instead, from I to vii^{o}. The second stepwise transposition moves the unstable **ti^{o}**-chord (m. 2) moves to a stable **la**-chord (m. 3), which alludes to a potential aeolian-minor tonic. In the last transposition of the sequence, the **la**-chord (m. 3) moves to a **So**-chord (m. 4), which most resembles a major-mode dominant. However, it immediately pivots to the local mixolydian cadence, **So-la-re-So** (mm. 5–6), which reveals the intended closing (but not enclosing) key of the subject.

After the repeated cadence, the subjects and the cadential harmony are transposed en masse by a fifth to a dorian-closing answer. Despite the fifth-transposition of a mixolydian-closing phrase to a dorian one (mm. 1–6 to mm. 6–11), the chords **mi^{7}-la** in the dorian cadence (m. 9; as dorian ii^{7}-v) also sounds like an aeolian v^{7}-i. In short, diatonic transposition of cadential progressions does not guarantee the transposition of tonics.

At the beginning of the first answer (m. 6), the listener may already question if the **So** chord belonged to the previous key of G mixolydian, the underlying C major, or the new key of D dorian. Yet, more tonics await. The sequential journey from the mixolydian cadence to the dorian cadence (mm. 6–9) is one of the most centrically rich passages in this dissertation. Reicha provides two countersubjects, and as a result, the descending step sequence is made up of fully-voiced chords. Within the step sequence, a descending fifth chordal sequence (arrows at the bottom of Example 2.5) is nested similar to the "diatonicized applied-chord sequence" introduced above (Example 2.3).

Because of the proliferation of tonics, there are at least four possible ways to hear this sequential journey from the mixolydian cadence (mm. 4–6) to the dorian one (mm. 9–11). Firstly, the listener can stay strictly within the background key of C major such that the mixolydian and dorian cadences are, from the orientation of common-practice harmony, atypical emphases on V and ii, and all the chords in between mm. 6–9 cycle through fifths (V-I^6_5-IV-$vii^{ø6}_5$-iii-vi^6_5-ii). Secondly, the listener could also begin at m. 6 in C major, but anticipate the subject-closing D dorian towards the end of the descending-step sequence and start hearing m. 9 in the dorian mode. Thirdly, the listener could similarly begin at m. 6 in G mixolydian and pivot to D dorian later on.

Lastly, those who have familiarized themselves with Reicha's commentaries may even hear each sequential segment of the descending step sequence as local II-V^6_5-I chord progressions in F lydian (mm. 6–7), E phrygian (mm. 7–8), and D dorian (mm. 8–9), the last one of which would confirm the answer's closing mode. Hearing the last chord of each sequential segment as the tonic essentially continues the subject's mixolydian cadence's ii^6_5-V^7-I (mm. 5–6) into the answer that follows. Although Reicha did not label these descending step sequential segments as

relative cadences (as he did with the subjects), his commentaries would have definitely primed listeners for these relative tonicizations.

In summary, the nested sequences in the modal fugue result in exceptionally tonic-saturated passages, in which an abundance of tonics weave a complex web of relationships with formal and harmonic conventions. In his own comments, Reicha prescribes a hearing based on the background major mode, and he labels each of the cadences to avoid confusion. In the context of 36 Fugues, the comparison of the chromatic fugue and the modal fugue shows a common theme of tonic abundance within the work itself. The two fugues also anticipate the widespread use of extreme chromaticism and diatonic modality later in the century.

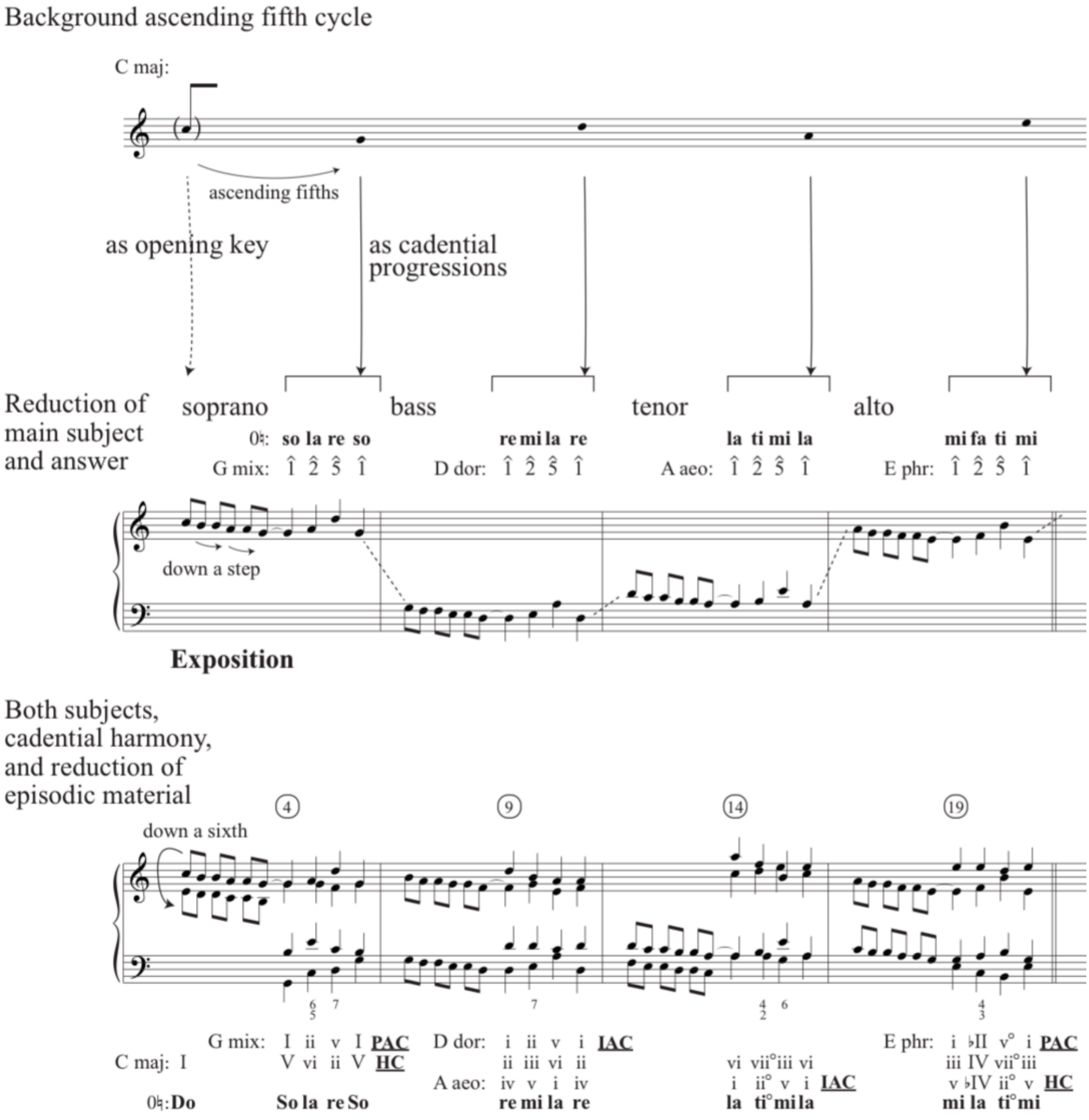
Sequence as Formal Determinant in Fugue No. 13

In Fugue No. 13, the fifth-transposition of the subject is continued as a sequential cycle that returns to the starting note. In Example 2.6, the top system shows the background fifth-cycle, the middle system shows the main fugal subject and answers, and the bottom system shows the cadences and linear reductions of subjects and episode material.

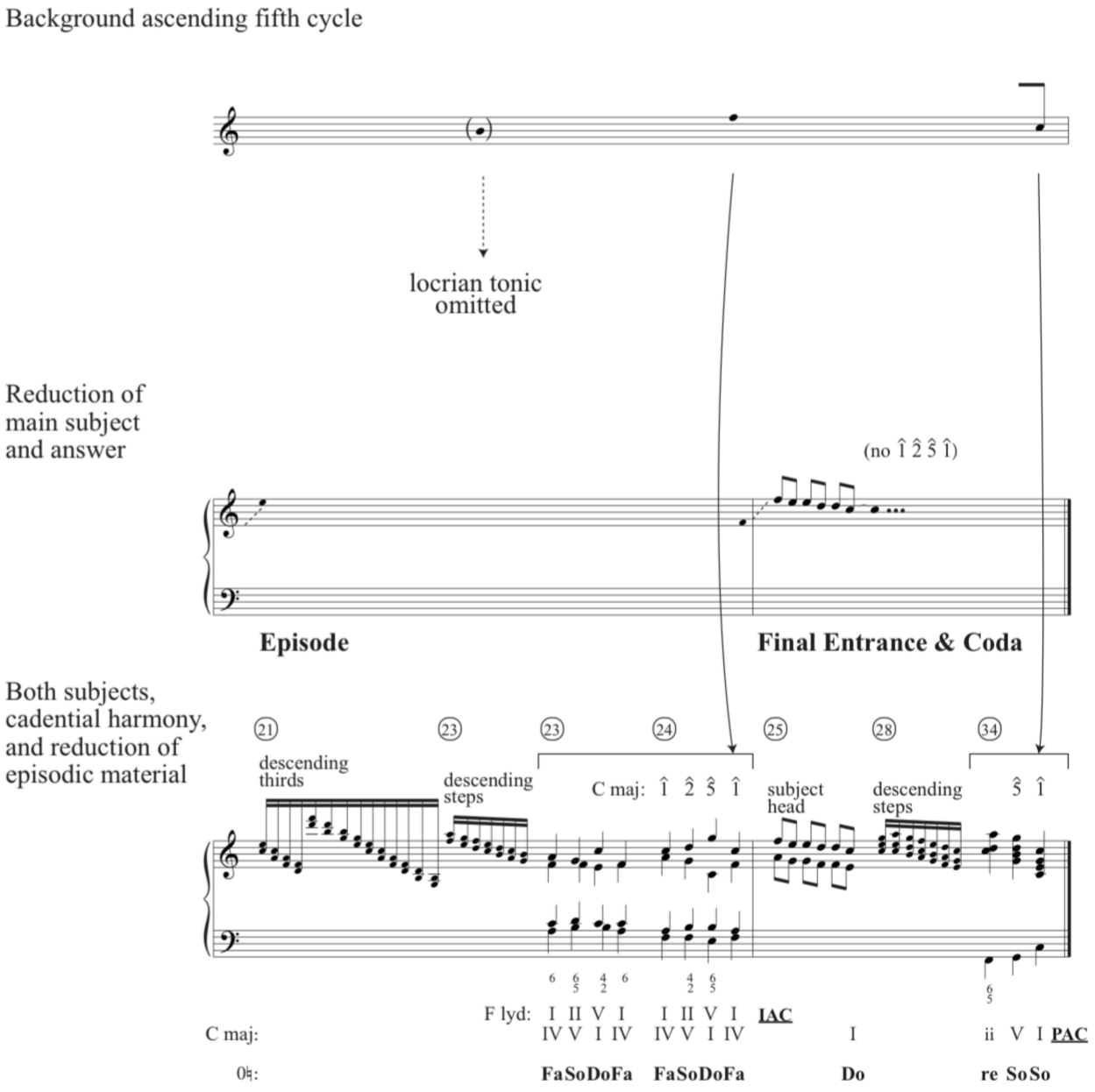
With two exceptions, **do** and **ti**, each note in the background cycle is represented by modal-cadential progressions. (Although the fugue opens in C major, there is no C-major cadence until the end.) In the four-voice exposition, Reicha rotates through **so** (mm. 4–6), **re** (mm. 9–11), **la** (14–16), and **mi** (mm. 19–21) as closing, cadencing modes; in other words, each diatonic position receives its own I-II-V-I cadential progression. The next tonic in line is the locrian tonic **ti**, which Reicha avoids by judiciously placing the locrian gap at the juncture between the exposition and the episodic material.

Two cadential progressions on **Fa** (mm. 23–25) conclude the episode with two different inversions of the cadential progression before C major returns and cadences at the very end (m. 34). This is the only time that Reicha presents two different inversions of the same chord progressions, and an interesting scale-degree ambiguity occurs at the second lydian cadential progression (**Fa** $\mathbf{So}_2^4$ $\mathbf{Do}_5^6$ **Fa**) at mm. 24–25. Previously, each subject has ended with the corresponding $\hat{1}$-$\hat{2}$-$\hat{5}$-$\hat{1}$ of the closing mode, but the lydian progression at mm. 24–25 suggestively harmonizes **do-re-so-do** in the upper voice (refer to Example 2.6)—the lydian-mode $\hat{5}$-$\hat{6}$-$\hat{2}$-$\hat{5}$ or the major-mode $\hat{1}$-$\hat{2}$-$\hat{5}$-$\hat{1}$. From the perspective of a listener with a major-mode orientation, the upper voice floats above its harmonic grounding to anticipate the major-mode closure. This suggests, once again, the inconclusiveness of non-major/minor modes and another reason why Reicha might have mandated a major-mode ending.

To summarize, Reicha marries his "new harmonic system" and "new fugal system" by cycling through all the modes within traditional formal areas of the fugue. Each formal area performs a unique function: the exposition pairs each main subject's entrance with a new mode, the episode explores the remaining non-major mode (which inversion suggestively reveals the relative major-mode $\hat{1}$-$\hat{2}$-$\hat{5}$-$\hat{1}$), and only in the coda does Reicha cadence in the major mode.



Example 2.6. Reicha, Fugue No. 13, reduction.



Example 2.6, continued.

There is more to this background cycle than meets the eye. The cycle is subject to modal and formal constraints—not all cycles are possible under Reicha's rules. His theory implies two constraints on mode for a piece's background sequential cycle: the sequence must end on **Do** to establish a major-mode hierarchy, and the sequence must skip **ti°**, since Reicha rejects the locrian

mode. Furthermore, the formal constraint of a four-voice sequential fugue is to cycle through four different keys in the exposition.[37] Table 2.4 shows all diatonic cycles ending on **Do** within the form of a basic four-voice fugue; the top row shows Reicha's original sequence. Since the transposition is sequential, one can also easily extend the sequences so that they all begin on **Do** to further assert the major-mode hierarchy.

Table 2.4. Original and hypothetical sequences for a four-voice relative-modal fugue.

			closing cadences		
	background sequence	Opening key	four-voice exposition	episode	coda
original	ascending fifth sequence	**Do**	**So re la mi**	(skip **ti°**) **Fa**	**Do**
hypothetical	descending fifth sequence	**Do**	**Fa** (skip **ti°**) **mi la re**	**So**	**Do**
	descending third sequence	**Do**	**la Fa re** (skip **ti°**) **So**	**mi**	**Do**
	ascending third sequence	**Do**	**mi So** (skip **ti°**) **re Fa**	**la**	**Do**
	descending step sequence	**Do**	(skip **ti°**) **la So Fa mi**	**re**	**Do**
	ascending step sequence	**Do**	**re mi Fa So**	**la** (skip **ti°**)	**Do**

Keeping the major-mode closure and the four-voice exposition, the only other thing that the transpositional interval changes is the location of the locrian gap. Reicha's original ascending fifth sequence (top row in Table 2.4) places the locrian gap between the exposition and the first episode, so that the skip in sequence is obscured by the formal break. If the sequence were reversed as a descending fifth sequence, then the locrian gap would lie exposed in the fugal exposition: the first three subjects would cadence on **Fa**, **mi**, and **la**, which would focus attention on the missing transposition. For a four-voice fugue, the only other possible sequence that hides the locrian gap in a formal break is the ascending step sequence (bottom row of Table 2.4), which places the locrian gap at the end.

[37] This discussion of fugal constraints can be generalized in any number of directions; I have chosen to retain the formal structure of Fugue No. 13.

There is, however, an additional didactic advantage to Reicha's background ascending fifth sequence in Fugue No. 13. The fifth sequence orders cadencing modes according to the pitch height of each mode (Table 2.5).[38] In the exposition, the set of scale degrees and most chords of each cadencing mode become flatter and flatter with each successive transposition. After the skipped locrian mode, which has the flattest scale degrees, an additional fifth-transposition brings it to the lydian mode, which has the sharpest scale degrees. By contrast, the cadential and scalar ordering by step (i.e., major, dorian, phrygian etc.) in *RSH* (Figure 2.2 and 2.3) and *PPA* obscures these relationships. In short, the fifth sequence has a hidden instructional value that orders the cadences by their scale-degree intervals from the cadencing tonic.

Table 2.5. Reicha, Fugue No. 13, modal scale degrees and cadential progressions.

Key:	Scale degrees:	Cadential progression:
Exposition		
C major (opening only)	$\hat{1}\,\hat{2}\,\hat{3}\,\hat{4}\,\hat{5}\,\hat{6}\,\hat{7}$	N/A
G mixolydian	$\hat{1}\,\hat{2}\,\hat{3}\,\hat{4}\,\hat{5}\,\hat{6}\,\flat\hat{7}$	$I\ \ ii^{6}_{5}\ \ v^{7}\ \ I$
D dorian	$\hat{1}\,\hat{2}\,\flat\hat{3}\,\hat{4}\,\hat{5}\,\hat{6}\,\flat\hat{7}$	$i\ \ ii^{7}\ \ v\ \ i$
A aeolian	$\hat{1}\,\hat{2}\,\flat\hat{3}\,\hat{4}\,\hat{5}\,\flat\hat{6}\,\flat\hat{7}$	$i\ \ ii^{o4}_{2}\ \ v^{6}\ \ i$
E phrygian	$\hat{1}\,\flat\hat{2}\,\flat\hat{3}\,\hat{4}\,\hat{5}\,\flat\hat{6}\,\flat\hat{7}$	$i\ \flat II^{o4}_{3}\ \ v^{o}\ \ i$
Episode		
B locrian (skipped)	$\hat{1}\,\flat\hat{2}\,\flat\hat{3}\,\hat{4}\,\flat\hat{5}\,\flat\hat{6}\,\flat\hat{7}$	N/A
F lydian	$\hat{1}\,\hat{2}\,\hat{3}\,\#\hat{4}\,\hat{5}\,\hat{6}\,\hat{7}$	$I^{6}\ \ II^{6}_{5}\ \ V^{4}_{2}\ \ I^{6}$ $I\ \ II^{6}_{5}\ \ V^{6}_{5}\ \ I$
Coda		
C major	$\hat{1}\,\hat{2}\,\hat{3}\,\hat{4}\,\hat{5}\,\hat{6}\,\hat{7}$	$I\ \ ii^{6}_{5}\ \ V\ \ I$

In summary, sequences in general permeate every level of Reicha's modal fugue. There are traditional descending fifth chordal sequences, transpositions of head motives by step, and larger background sequences of subjects and cadences by ascending fifths. Moreover, the background sequences are inseparable from fugue's formal structure and Reicha's relative-modal prescriptions.

[38] This follows the procedure discussed in Clough and Meyerson 1985.

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Although Reicha's experimental theory of relative-modal tonicization was not widely adopted, his theory provides unique insights about diatonic modes from the perspective of a composer steeped in common-practice harmony and working at the dawn of the nineteenth century. In Reicha's theory and compositions, major-mode closure is a source of hierarchy and stability, and it sidesteps inconclusive finals and open structures. His way of generating modal material by transposition is not only an efficient compositional device, but it also leads to music that maximally resembles parallel major/minor modes, making these associative pathways particularly inviting. Because successive diatonic transpositions sit at the heart of Reicha's theorizing, and they imply parallel major/minor modes, I argue that the diatonicized applied-chord sequence embodies Reicha's theory. From this viewpoint, sequences saturate every level of Fugue No. 13.

With the benefit of hindsight, major-mode closure—the only explicit prescription in Reicha's compositional theory—was the rule that contradicted his goal of creating more variety in art. Little did he know that in a few decades' time, non-major/minor modes would enclose keys in their own right. Even if Reicha's method of composition seems rigid in light of musical works after his death, the topics that Reicha touches on—such as maximal resemblance, diatonic transpositions, and conclusiveness—are still relevant today. As the following chapters will show, the "subtleties of a conventional taste" continue to influence the perception and composition of these pieces many decades after Reicha's death (*RSH*, 136).

Chapter 3: Lydian Modes and Leading Tones

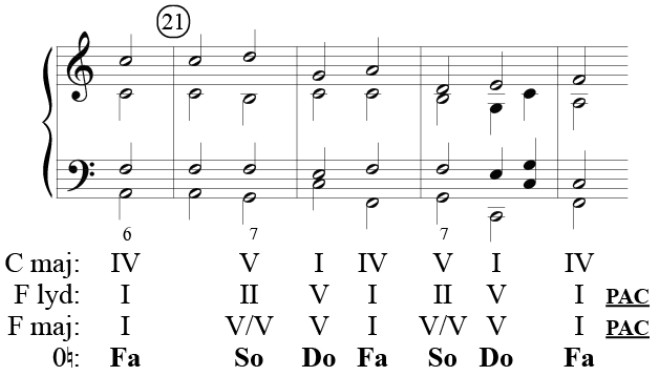
One of the hallmarks of expanded diatonicism is the "vitiation of the force of the leading tone by lowering or omitting it" (Longyear 1988, 296). From a diatonic-positional perspective of diatonic modes, the tonic has simply shifted elsewhere; **ti** and **fa** remain a tritone apart. From a scale-degree perspective, however, ♭$\hat{7}$ violates centuries of engrained closure via semitone resolution ♮$\hat{7}$-$\hat{1}$. Taruskin describes how, by using ♭$\hat{7}$, Satie "rid[ded] his music of its harmonic glue," rendering cadential functions "tonally denatured" (2005, 66–67). Among the non-major/minor modes, only the lydian mode has ♮$\hat{7}$. This means that the lydian mode's cadential functions and harmonic "glue" remain intact, and for this reason, the lydian mode strongly bridges common-practice harmonic language and diatonic-modal exploration. The lydian mode's comparably numerous appearances in early nineteenth-century works further supports this argument.

Moreover, the lydian mode's characteristic scale degree ♯$\hat{4}$ can also be assimilated into common-practice harmony as a local leading tone. The slow movement of Beethoven's A-minor String Quartet, Op. 132 (1825), the *Heiliger Dankgesang eines Genesenen an die Gottheit, in der lydischen Tonart*, is a familiar case in point.[39] In the *Dankgesang*, bona fide II^7 chords in the lydian mode can be interpreted as common-practice tonicizations (V^7/V) (Example 3.1). I refer to this concept as ♯$\hat{4}$ assimilation.

♯$\hat{4}$ assimilation is the interpretation of the lydian ♯$\hat{4}$ as a chromatic embellishment of ♮$\hat{5}$ or a

[39] The movement has been analyzed many times. See especially Brandenberg 1982, Kerman 1952, 1967, Korsyn 1993, Mason 1947, Radcliffe 1965, and Schenker 1954, some of which I excerpt in the sections that follow.

♮$\hat{7}$/V in the parallel major mode. Accordingly, the concept assumes a basic hierarchy that consists of a background major mode with a surface ♯$\hat{4}$.[40] Crucially, ♯$\hat{4}$ assimilation relies on the idiomatic, common-practice use of ♯$\hat{4}$ and the absence of ♮$\hat{4}$ to retain the lydian-mode interpretation. The lydian and the major-mode interpretations are not mutually exclusive; the former stems from a scalar perspective, and the latter stems from a presumed hierarchy based on common-practice harmony.



Example 3.1. Beethoven, String Quartet in A Minor, Op. 132, mvt. III, *Heiliger Dankgesang*, fourth chorale phrase (mm. 21–24).

While Beethoven evokes the lydian mode for its churchly associations, the liturgical Lydian mode in the 8-mode system includes both B♭ and B♮ (see again Figure 1.1b in Chapter 1). Indeed, Beethoven's earlier sketches include the note B♭, but the final version of the movement is limited to the 0♮ scale in order to distinguish the liturgical Lydian mode from the major mode (Brandenburg 1982, 163–67; Biamonte 2000, 135–47).[41] Even without B♭,

[40] Schenker provides more common-practice examples of ♯$\hat{4}$ in *Counterpoint* (2001, 58).
[41] Similar strategies of limiting F lydian to the 0♮ scale are suggested in eighteenth-century modal theories by Vogler, Knecht, and Türk (Brandenburg 1982).

however, Schenker argues vehemently for an F-major reading in order to assert the primacy of the major/minor modes in his theory of monotonality.[42] In his view, the *Dankgesang*

> makes it quite clear that even a genius like Beethoven could not persist in the Lydian mode; that he could not impose it either on his own instinct or on ours. No matter how much effort he exerted in the attempt, the F major character of the composition is unmistakably transparent, even though we may feel disturbed by a somewhat vexed and unnatural strain. It is true that the author's intention to avoid the B-flat is particularly noticeable—an intention which, in art, unfailingly entails punishment; it is not true, however, that, in accordance with that intuition, the Lydian mode is presented convincingly. (Schenker 1954, 60)

Oswald Jonas, clarifying Schenker's stance, comments that Beethoven "reached that [lydian] effect […] by means put at his disposal by the modern systems, viz., chromatization and tonicalization. […] Thus it is obvious that Beethoven did not prove in any way the possibility of writing in a 'Lydian system,' which in reality, never existed" (Schenker 1954, 61n1).

Matthew Brown calls the concept behind Schenker's stance the "myth of scales" (2005, 141–170): in Schenker's view, the scale of 0♮ is merely a byproduct of tonicization. Schenker's view seems to exclude the effects of relative modality between F lydian and its relative mode C major. In other words, deemphasizing the scale ought to reduce or erase any scale-based phenomena. Yet, I will argue below that the scale is no myth. As long as a scale is present, there is potential for the effects of relative modality to take hold. Therefore, ♯$\hat{4}$-assimilation uniquely realizes—not merely implies—both relative and parallel major modes of F lydian without ever leaving the 0♮ scale. In other words, ♯$\hat{4}$-assimilation and centric ambiguity are not mutually exclusive.

Historically, most writers, unlike Schenker, acknowledge an ambiguity between C major and F lydian. Philip Radcliffe writes that "Lydian tonality is fascinatingly ambiguous, constantly veering towards C yet restrained by a quietly persistent pull towards F" (1965, 118). Since

[42] See Korsyn 1993 (157, 196) for a Schenkerian sketch of the *Dankgesang*.

centric ambiguity also muddles harmonic expectations, Kevin Korsyn asks rhetorically, "Is the music tonally at rest or moving forward?" (1993, 157). Daniel Mason argues most strongly for C major. He writes that "the crucial fourth phrase […] reaches for us not the tonic of F, whatever the superscription may say, but the *subdominant of C!*" (1947, 195). To Mason, the sense of C major is so strong that it is possible that Beethoven's superscription "is to be taken in a Pickwickian sense, as one of his little jokes" (1947, 196).

Joseph Kerman's longer description essentially describes what I have called ♯$\hat{4}$-assimilation and the extraordinary effects that Beethoven achieves through this technique.

> [The Lydian mode is] neither Greek, Gregorian, nor Palestrinian, it is F major with a raised fourth degree. [...] It is inconceivable for Beethoven to write non-tonally, so a problem in this movement […] was how to control the Lydian mode in terms of Beethoven's tonality. For the raised fourth, the B-natural, is the most dynamic note in the chord of the 'dominant-of-the-dominant,' G, the leading-tone into the dominant key, C major. Consequently, there is a very strong urge to modulate into the dominant, and on the face of it is impossible to return to the tonic F without restoring the B-flat, which is never done. The tonic sounds like a subdominant; a feeling of inaction results, the antithesis of the progressive, dramatic sound of the dominant. This difficult experiment in tonality was undertaken, I am sure, in order to obtain this curiously remote and transcendent aura. (Kerman 1952, 46–47)

Kerman acknowledges that the lydian mode is F major with ♯$\hat{4}$, but he rightly observes that repeated dominant tonicization will inevitably make the dominant a tonic. Therefore, it is ironic for Schenker that tonicization—the actual theoretical device that accounts for ♯$\hat{4}$—is responsible for centric ambiguity.

Under Beethoven's almost ceaseless tonicization, the hierarchy that tonicization presumes may gradually disappear. Consider Figure 3.1, which shows four different major-mode harmonic analyses—or hearings—of the same lydian passage by Beethoven (shown earlier in Example 3.1). Hearings 1 and 2 differ primarily by notation (namely, tonicization makes the tonicized note a tonic). Hearing 3 extends the secondary dominant's influence to surrounding

chords, a non-conventional but non-problematic account of pivot chords. At this point, C major ursurps the entire phrase: from Hearing 3 to Hearing 4, the background F-tonic loses its influence. In short, and simply put, repeated tonicization of C major effectively makes C major the tonic.

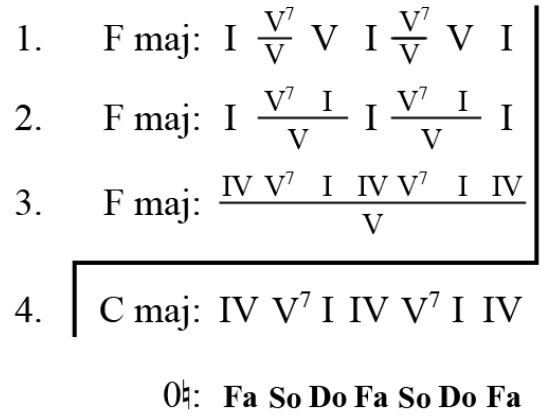


Figure 3.1. Gradually disappearing F-major hierarchy under repeated C-major tonicization.

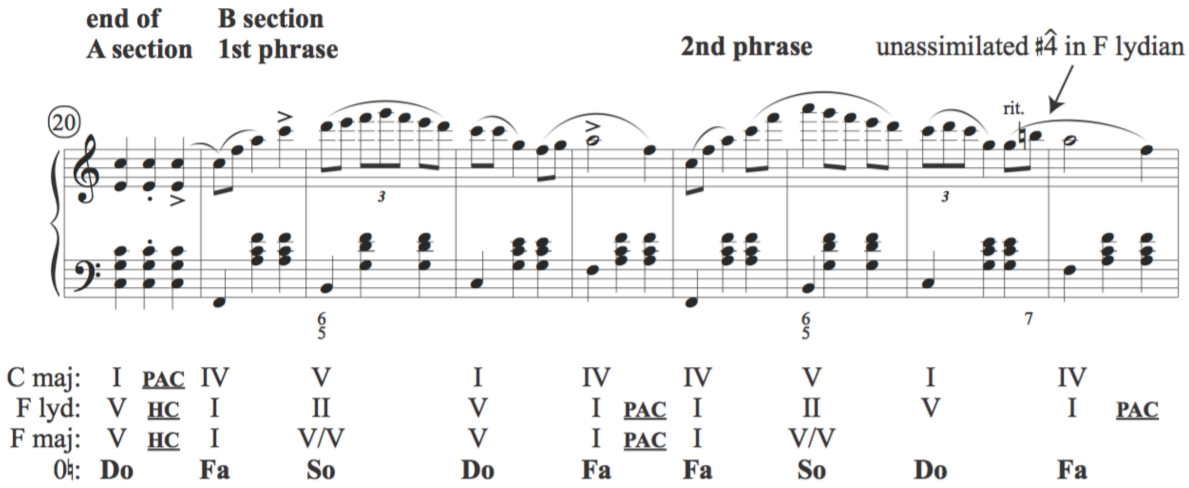
The non-trivial implication of ♯$\hat{4}$-assimilation is that F major, F lydian, and C major are all valid interpretations. Schenker recognizes that Beethoven's *lydische Tonart* is F major with tonicized dominants, and Beethoven is able to distinguish the *lydische Tonart* from F major by using the white keys only. Regardless, because Beethoven stays in a single scale, the key of C major arises as a tonicized chord of F major and a relative mode of F lydian.

Beethoven's lydian mode, however, is a delicate balancing act. It only takes one misplaced—or *unassimilated*—♯$\hat{4}$ to invalidate Schenker's claim. In contrast to the assimilated ♯$\hat{4}$,

An ***unassimilated ♯$\hat{4}$*** does not conform to common-practice usage, and it forces a lydian-mode

interpretation if it is heard in a strictly diatonic scalar context.

Chopin's lydian phrase in his Mazurka in C major, Op. 24, No. 2 demonstrates two approaches to the use of ♯$\hat{4}$ vis-à-vis common-practice harmony (see Example 3.2): an assimilated ♯$\hat{4}$ in the first phrase and an *unassimilated* ♯$\hat{4}$ in the second phrase. In m. 27 of the Mazurka (Example 3.2), the incorporation of ♯$\hat{4}$ as an essential chordal seventh of **Do**[7] means that ♯$\hat{4}$ cannot be assimilated into common-practice harmony anymore. In response, Schenker claims that Chopin's unassimilated ♯$\hat{4}$ is an "artistic archaism, a highly ingenious trick, such as could befall Chopin occasionally in the midst of his fantastic improvisations" (2001, 57). It is perhaps because of the unassimilated ♯$\hat{4}$ that Charles Rosen considers this mazuka's lydian mode to be "genuine;" however, as he acknowleges, centric ambiguity still exists between F and C: "The only real modality in the Mazurkas—perhaps the only real modality in Chopin—is found in bars 21 to 36 of this Mazurka, which have a genuine Lydian sound, not just an F major with a rustically sharpened fourth. Even here, indeed, the repeated dominant seventh chord of C major tends to undermine the modal effect" (Rosen 1995, 418n1).



Example 3.2. Chopin, Mazurka in C major, Op. 24, No. 2, B section, opening (mm. 20–28).

Although Chopin's Mazurka and Beethoven's "Holy Song" borrow from two very different styles—Polish folk dance and learned-style church modes, respectively—the focus of this chapter is compositional strategies that arise from extending common-practice harmony, strategies that are more or less independent of such stylistic references. (Chapters 4 and 6 will examine institutionalized diatonic-modality in French liturgy and English folk song.) The remainder of this chapter will revolve around the relationship between what I am calling ♯$\hat{4}$-assimilation and the concept of enclosure, more specifically, stable major-mode enclosures I discussed in Chapter 2, and less stable lydian-mode enclosures. First, I will continue my analysis of the C-major mazurka, showing how Chopin plays with ♯$\hat{4}$-assimilation all within the stable confines of C major. Then, I will examine the relationship between relative modality and unstable lydian closure in Beethoven's *Heiliger Dankgesang*. Lastly, I will conclude the chapter with a comparison of *Heiliger Dankgesang* and another Chopin mazurka, the Mazurka in A minor, Op. 17, No. 4 (1833). By teasing out the relationship between inconclusive finals and open structures, I will show that those two pieces have more in common than at first appears.

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Chopin's Mazurka in C Major, Op. 24, No. 2

The B section (Table 3.1) of Chopin's C major Mazurka (mm. 21–37) is the most overtly modal passage in the work. However, Chopin also hints at other diatonic modes within the larger C-major enclosure. As Nicholas Temperley describes, "[a] sustained effort at modal harmony is found in op. 24, No.2, one of Chopin's most original experiments. Clinging rigidly to the white notes, he nevertheless contrived to effect 'modulations' in and out of the 'keys' of C major, G major, A minor and F major – the latter with, of course, a sharpened 4th" (Temperley et. al.,

1985, 52). However, the "keys" remain strictly in the 0♮, becoming G mixolydian, A aeolian, and F lydian as a result. The organization of many relative modes within C major actually complies with Reicha's prescription (Chapter 2); even Temperley's description of Chopin's original experiment and contrived modulations alludes to Reicha's unorthodox theory.

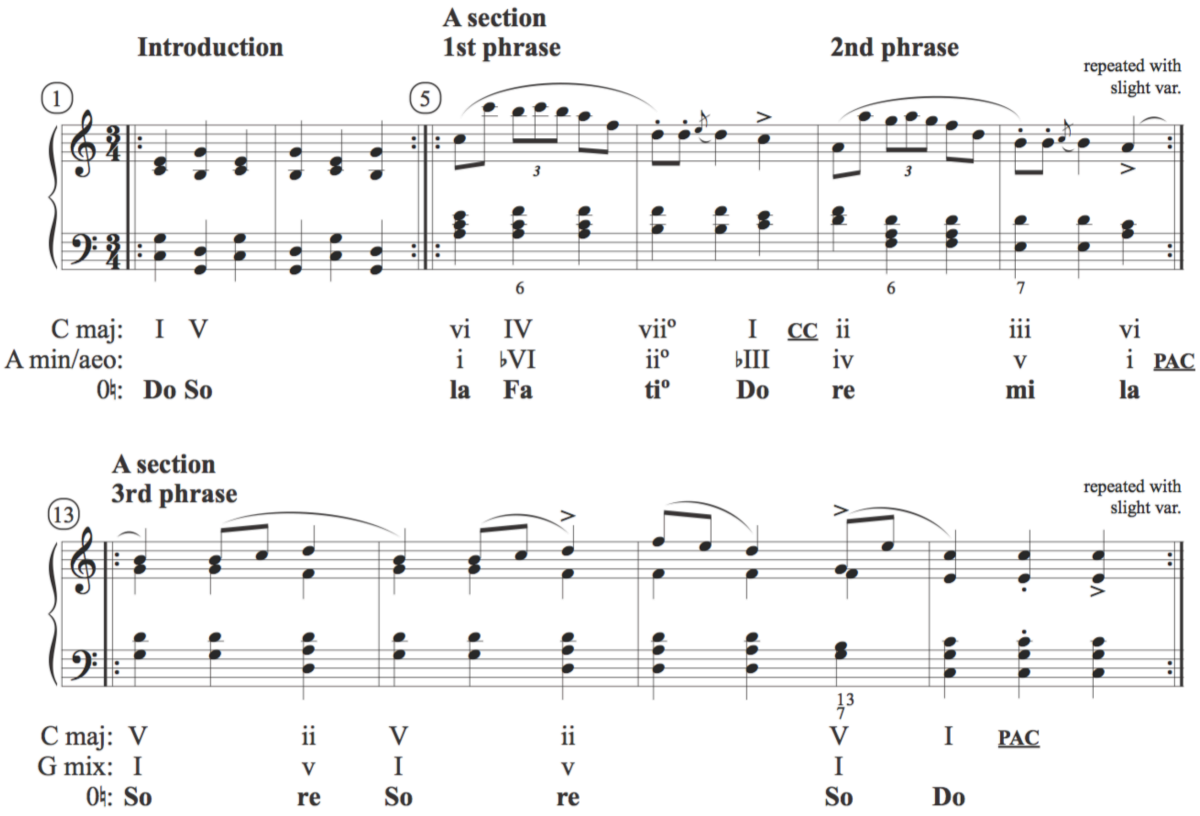
Table 3.1. Chopin, Mazurka in C major, Op. 24, No. 2, formal organization.

ternary form						
internal ternary form strict 0♮				6♭	strict 0♮	
intro	A1	B	A2	C	A3	coda
1	5	21	38	68	100	116
C major	C maj and A aeo/min, with G-mix tonicization	F lyd	C maj and A aeo/min	mostly in D♭ maj, chromatic transition	C maj and A aeo/min, with G-mix tonicization	C maj (and F lyd/maj)
Ex. 3.3		**Ex. 3.1**	**Ex. 3.4**	**Ex. 3.5**		**Ex. 3.6**

There is little evidence to suggest that Chopin (or Temperley) knew of Reicha's work; Chopin probably arrived at the same compositional strategy independently. Nonetheless, Reicha's observations still hold: (1) diatonic modes create variety without changing the scale, (2) closing a diatonic-modal piece with the major mode safeguards it from an inconclusive final, and (3) all modal passages identified maximally resemble their common-practice counterparts.

In section A1 of the mazurka (Example 3.3), a folk-like introduction establishes C major with a parallel-fifth **Do-So** oscillation (mm. 1–4). This is followed by a first phrase (mm. 5–6) that cadences on **Do**, and a second phrase (mm. 7–8) that cadences on **la**. Since ♭/♮$\hat{7}$ is omitted at the cadence on **la** (m. 8), and the lydian mode sets the tone for modal interpretation, the second phrase's cadence can be heard in A minor or A aeolian. Chords before the cadences (m. 5 and m. 7) could be heard in both **Do**- or **la**-centers. The third phrase (mm. 13–16) begins with a **So-re** oscillation and cadences in C major. (The lydian section discussed above in Example 3.2

immediately follows.) The **So-re** oscillation is a diatonic transposition of the opening **Do-So** oscillation, and it can be heard as an irregular V-ii oscillation in C major, or a relative-modal tonicization (i.e., a I-v oscillation) of G mixolydian. As I will illustrate at the end of this section, the first (mm. 5–6) and third phrases (mm. 13–16) actually foreshadow similar techniques at the mazurka's coda. Before discussing the coda, I will trace the relative-modal and motivic effects of the ♯$\hat{4}$ between the B section and the coda in chronological order, showing common threads that tie the mazurka's contrasting sections together.



Example 3.3. Chopin, Mazurka in C major, A section (mm. 1–16); repetitions replaced with repeat signs.

As noted above, the lydian mode's characteristic ♯$\hat{4}$ is the easiest scale degree to assimilate into common-practice harmony, since it can appear as an idiomatic neighbor note or in the context of an applied dominant. The assimilation of the characteristic scale degrees in all

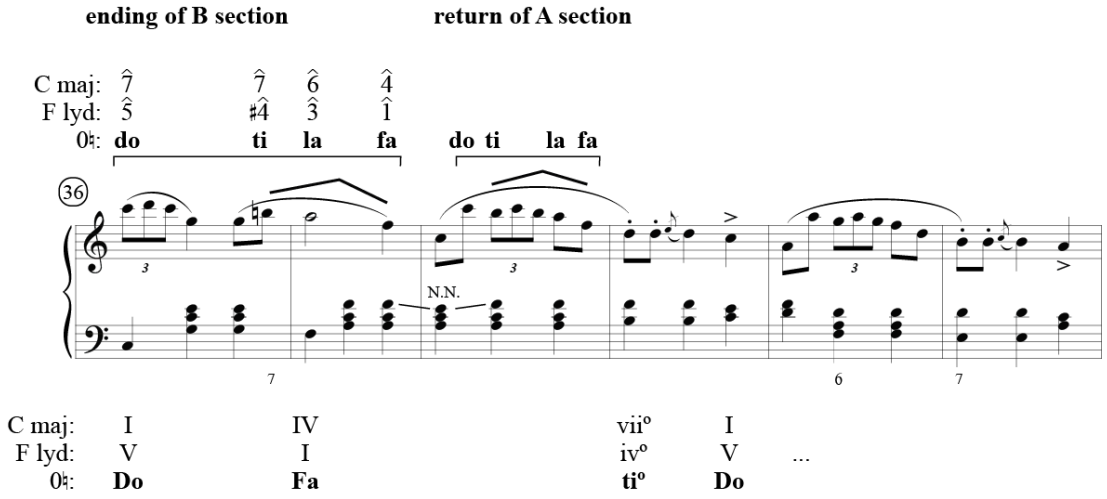
other non-major diatonic modes is much more difficult. Since all diatonic modes other than the major mode and the lydian mode have ♭$\hat{7}$, the composer would have to avoid ♮$\hat{7}$ altogether, which is essential for common-practice closure. In the Chopin C major Mazurka, the second phrase of section A1 (mm. 7–8 in Example 3.2) does exactly that, but in a rather trivial fashion: Chopin simply omits ♭/♮$\hat{7}$ at the cadence so that he preserves the strict white-key sound of the section without the markedness of the aeolian ♭$\hat{7}$.[43]

After omitting a potential aeolian ♭$\hat{7}$, Chopin immediately provides a counter-example with a local mixolydian ♭$\hat{7}$ in the **So-re** oscillation (mm. 13–15 in Example 3.2). Unlike the lydian mode's ♮$\hat{7}$ or ♯$\hat{4}$, the ♭$\hat{7}$ in the mixolydian I-v cannot be assimilated into G major. To assimilate ♭$\hat{7}$ in a chordal context is to use it as a V^7/IV in G major while also avoiding ♮$\hat{7}$ altogether. Perhaps the cadential ♭$\hat{7}$ is too radical for Chopin, he avoids the mixolydian cadence on the **So-re** oscillation by immediately turning to a C-major cadence in m. 16. Regardless, the two potential modes with ♭$\hat{7}$—aeolian and mixolydian—are only hinted at; indeed, each is undermined soon after it is presented. By omitting ♭$\hat{7}$, the aeolian mode is undermined by the trivial assimilation of ♭$\hat{7}$ into common-practice harmony. Although the mixolydian ♭$\hat{7}$ is not omitted, the mixolydian mode is undermined by avoiding a v-I cadence in that mode. Nevertheless, these two tonicizations anticipate lydian techniques at the coda I discuss later.

The coda (mm. 116ff) includes a final reference to the use of ♭/♮$\hat{7}$, but before discussing the coda, I will trace a tritone motif through sections A2, C, and A3 of the marzurka (refer again to Table 3.1 for a formal diagram). The unassimilated ♯$\hat{4}$ and $\hat{1}$ first heard in m. 27 (Example 3.2) highlights a tritone motif with the tonic that extends through the 6♭ section (mm. 68ff; see

[43] Schenker identifies the key as "an allegedly true 'Aeolian' system" "instead of a real A minor" (2001, 57). The avoidance of ♭$\hat{7}$ is in stark contrast to the emphasize of C major's ♮$\hat{7}$ in its atypical vii°-I cadence (m. 6).

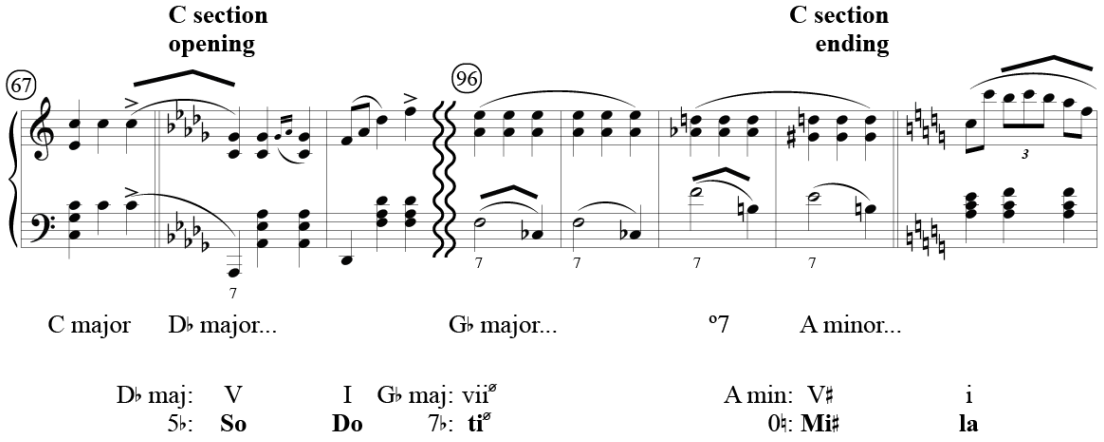
the form diagram in Table 3.1) back into the returning 0♮ section (mm. 100ff). The first thing that the unassimilated ♯$\hat{4}$ does is to recontextualize the opening in the lydian mode. Immediately after the lydian B-section (see Example 3.4), the return of the first phrase (mm. 38–39) could be heard as an extension of the lydian mode. As a result of the unassimilated ♯$\hat{4}$, both sections B and A2 share the **do-ti-la-fa** melodic line (mm. 36–38 in Example 3.4), which occurs over **la-Fa**[6] chords that continue in the inner-voice register. This way, the entirety of m. 35 could be heard as an extension of m. 34's root-position tonic **Fa**-chord, the apparent **la** chord a result of the **fa-mi** neighboring motion (mm. 37–38 in Example 3.4). The melodic tritone gradually acquires more scale-degree identities as the listener progresses through the 0♮ section.



Example 3.4. Chopin, Mazurka in C major, juncture of B and A' sections (mm. 36–41).

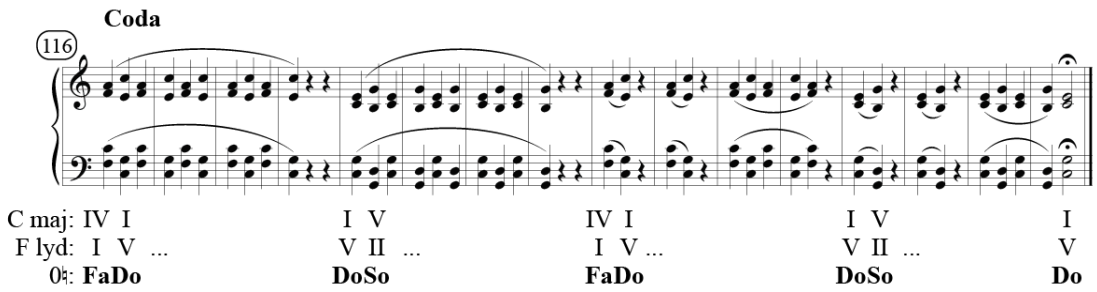
Scale-degree reinterpretation continues after the contrasting C section in D♭ major (Example 3.5): the returning theme's major-mode opening actually begins in the minor mode with an explicit G♯ tonicization (m. 99). It is also preceded by modulations that use the tritone as a motivic interval. Example 3.5 shows three places where the melodic tritone is used to

modulate: as a motivic interval at the modulation from C major to D♭ major (C, G♭) in mm. 67–68, as an interval that participates in the enharmonically reinterpreted º7 chord (F, C♭/B♮) in mm. 98–99, and finally as the melody in section A2 (m. 100). In sum, the unassimilated ♯$\hat{4}$ in m. 27 triggers a series of modulatory tritones that end up not in F lydian, C major, or A aeolian; but in the common-practice key of A minor.



Example 3.5. Chopin, Mazurka in C major, sectional boundaries of chromatic middle section (mm. 67–69 and 96–100).

In section A3, Chopin replaces the lydian section with a coda that maximizes the ambiguity between C major, F lydian, and F major (Example 3.6). He does so by juxtaposing the **Do-So** parallel-fifth oscillation that began the piece (now in mm. 119–22) with its transposition to **Fa-Do** in the scale of 0♮ (mm. 116–19) so that **Fa-Do** can be heard as IV-I or I-V. This is comparable to the trivial assimilation of the aeolian ♭$\hat{7}$ back in mm. 7–8 (refer to Example 3.2 above), which simply omitted the characteristic scale degree. All three interpretations (C major, F lydian, and F major) of the **Fa-Do** oscillation are possible in the coda because neither B♭ or B♮ is present in mm. 116–19).



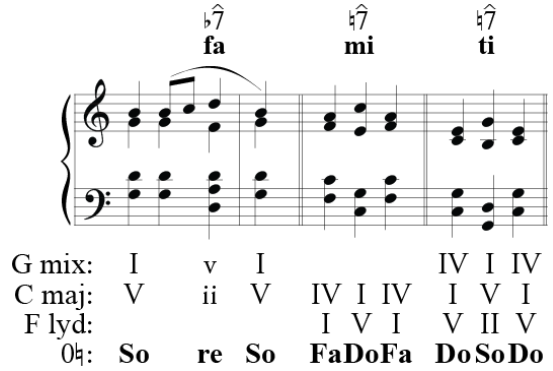
Example 3.6. Chopin, Mazurka in C Major, coda (mm. 116–131).

Commentators' disagreements reflect this ambiguity. Rosen, arguing against Temperley's description, states that "the end […] seems to me not 'strict modality' as Nicholas Temperley calls it in the *New Grove*, but strict tonal C major" (Rosen 1995, 418n1).[44] Schenker argues that "the ingenious conclusion of the Mazurka […] orients the listener beyond any doubt" in connection to the "absolute certainty of only C major and F major" (2001, 57), supporting his point that the "alleged" lydian mode earlier was a surface irregularity. My goal here is not to arbitrate which interpretation is correct, but to point out that, similar to the lydian B section, it is possible to hear the **Fa-Do** oscillation in all three keys because of relative modality and ♯$\hat{4}$ assimilation.

Example 3.7 contrasts the three oscillations featured in Chopin's Mazurka in C major. To frame the coda's **Do-So/Fa-Do** oscillations (see Example 3.6) in terms of my opening discussion, they are the only two diatonic, local I-V oscillations that contain ♮$\hat{7}$; therefore, they are also the only ones that can be interpreted in the common-practice major mode. By contrast, the aforementioned **So-re** oscillation (mm. 13–15 in Example 3.2, repeated as the mazurka's

[44] In reference to Temperley et. al. (1985, 52). It is unclear what Temperley meant by "strict modality"; it could refer to the tonicizations or the general folkloric character.

structural cadence in mm. 114–15, not shown) has a similar voicing, but it serves as a negative example that does contain a local ♭$\hat{7}$.



Example 3.7. Chopin, Mazurka in C major, fifth oscillations.

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The Lydian Enclosure of Beethoven's *Heiliger Dankgesang*

Like Reicha's relative-modal pieces, Chopin's mazurka has a definite C-major ending, which nullifies whatever centric ambiguity arose within the piece—Reicha explicitly forbade non-major/minor closure for good reason, historically and stylistically speaking. By contrast, in Beethoven's *Heiliger Dankgesang*, even complete assimilation of ♯$\hat{4}$ into common-practice harmony throughout the piece does not preclude an inconclusive final, because of the singular 0♮ scale he uses. In this section, I will examine the larger context of Beethoven's lydian cadences.

Beethoven's slow movement alternates between A sections in F lydian and contrasting B sections in D major marked *Neue Kraft fühlend* (feeling new strength) (Table 3.2); each lydian A section becomes progressively more contrapuntally elaborate. Since the central A2 section differs only slightly from the opening one, I will discuss only sections A1 and A3, the *Dankgesang*'s opening chorale (mm. 1–30) and closing section (mm. 168–211).

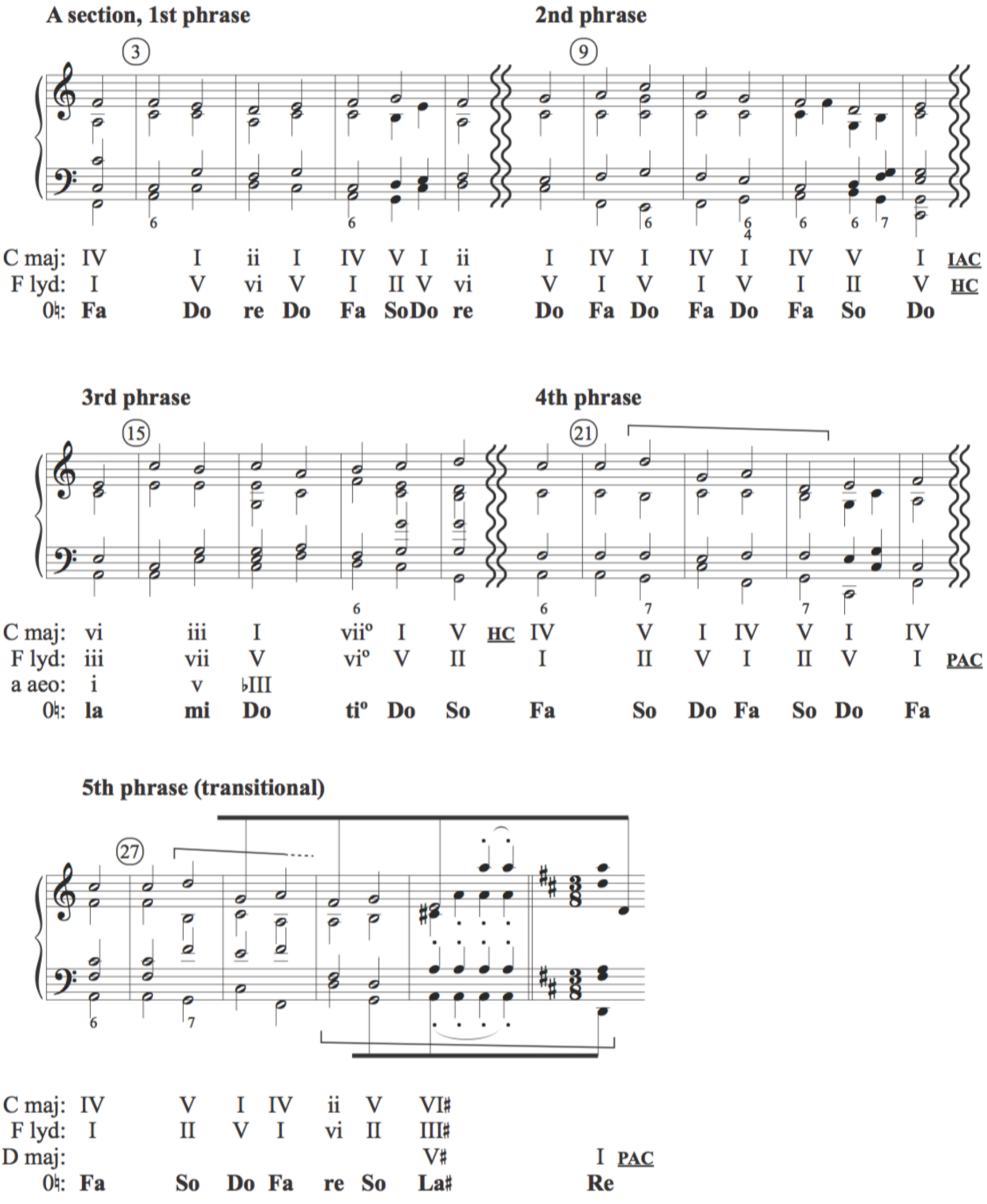
Example 3.8 shows the opening chorale (section A1). The chorale consists of four main phrases and a fifth phrase that transitions into the D-major section. (All essential harmonic activity occurs within these chorale phrases proper; short contrapuntal passages precede each of those phrases, but they are omitted in Example 3.8).

Table 3.2. Beethoven, *Heiliger Dankgesang,* formal organization.

mm. 1–30	mm. 31–83	mm. 84–114	mm. 115–167	mm. 168–211
A1	B1	A2	B2	A3
F lydian	D major	F lydian	D major	F lydian
Ex. 3.8				**Ex. 3.9**

After the first phrase's F-major deceptive cadence on **re** (m. 6), the sense of C-major centricity grows stronger in each phrase. The second phrase ends with a **So-Do** cadence (m. 12), which could be a C-major PAC or a F-major/lydian HC. From an F-centric perspective, the second phrase begins with an oscillation between I and V, which is followed by a I-II-V progression that concludes as a HC in m. 12. From a C-centric perspective, the second phrase begins with an oscillation between I and IV, which is followed by a IV-V-I progression that concludes as a PAC in m. 1. The third phrase ends on a **So** (m. 18), a C-major HC, which establishes a strong C-major centricity that continues into the fourth phrase.

In the context of the preceding three phrases, the fourth phrase (which was excerpted at the beginning of the chapter) is the most extraordinary in terms of relative modality, because the F-lydian cadence in the fourth phrase (m. 24 in Example 3.8) closes the entire section, but C major is strongly asserted from the second phrase (m. 9) onwards. In fact, there is perhaps not so much "F-lydian content" in the chorale at all.



Example 3.8. Beethoven, *Heiliger Dankgesang*, section A1 (mm. 3–31); short contrapuntal passages omitted.

The fifth phrase begins like the fourth phrase, but it quickly modulates to D major (m. 31), the chromatically inflected submediant of F. Mason and Kerman have opposite views of the fifth phrase. Mason argues that the modulation "deepen[s] the sense of groping uncertainty already induced by the melody (1947, 196), while Kerman argues that the modulation paradoxically stabilizes the hymn:

> Once Beethoven allows this fatal push [towards C major] to take place—already in the second hymn-phrase—a cadence in the tonic key becomes an impossibility. […] So the final phrase takes the only way out, retracing its steps and opting boldly for modulation, a deflection to another key center. […] That a modulation from F to D via A can stabilize the hymn […] is perhaps the supreme paradox of this movement. (Kerman 1967, 257–58).

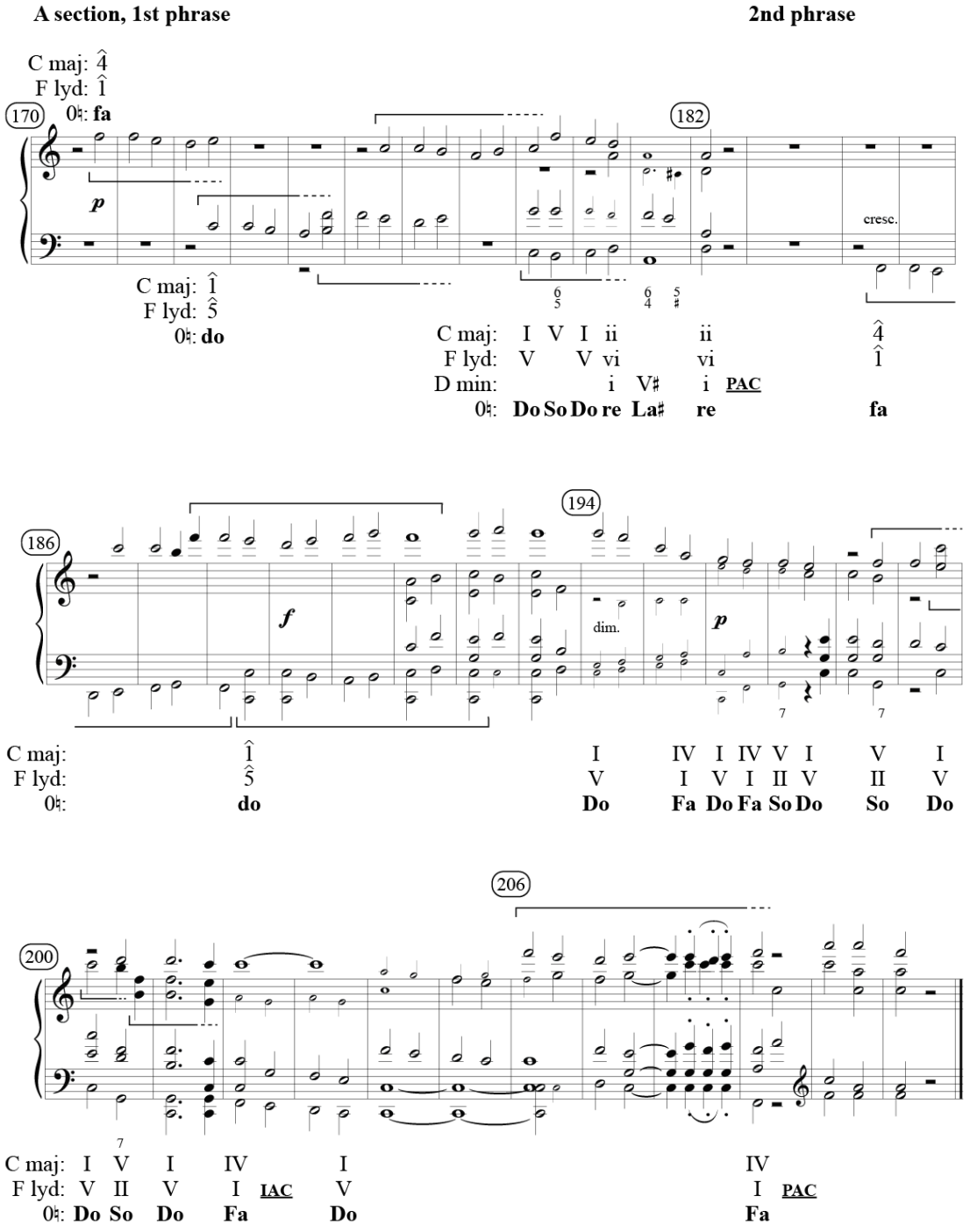
Beyond tonic stability, Korsyn (1993) also identifies Schenkerian progressions and motives that link the contrasting A and B sections (relevant annotations by Korsyn are included in Example 3.8). A Schenkerian descending fifth-progression [A]-G-F-E-D bridges the two section (Korsyn 1993, 156–57). Korsyn also notes that the D-G-A-D bass line leading into the B section (mm. 29–31) is also foreshadowed by the first violin in mm. 21–23 and 27–26 (Korsyn 1993, 163–64) (see the square brackets in Example 3.8).

To summarize, in the first four phrases of *Heiliger Dankgesang*'s opening chorale (section A1), C-major centricity grows stronger and stronger until the lydian cadence at the end of the fourth phrase (m. 24 in Example 3.8). The cadences on **Do** and **So** in the second and third phrases (mm. 12 and 18, respectively) strongly assert the C-major center, and, to many writers, the fourth phrase's F-lydian cadence (m. 24) is abrupt and unstable. In the fifth phrase, Beethoven makes another sudden move to D major (m. 31), which writers see as either deepening or stabilizing the lydian instability, while hidden motives and contrapuntal progressions link the two sections. Regardless, no matter how unstable the F-lydian cadence is, it is quickly replaced by a more stable key of D major. This movement into the chromatic mediant

between sections A1 and B1 is repeated between sections A2 and B2 (refer to the formal diagram in Table 3.2).

The most crucial difference between the F-lydian cadences of sections A1 and A3 is that there will be no more recourse to the submediant D major in the latter; the strong emphasis on C major remains through the last chord. Rather, in section A3, the entire movement ends on the unstable tonic, which effects the interpretation of the entire movement. Furthermore, in section A3, Beethoven pairs this ending with more elaborate counterpoint, everything takes longer to build up, and the climaxes are more dramatic and deceptive.

Example 3.9 is a reduction of section A3. This last chorale section only has two phrases: the first phrase ends on **re** as D minor (mm. 168–182), and the last phrase ends on **Fa** inconclusively (mm. 183ff). Both phrases begin with contrapuntal passages featuring polyphonic imitation of the chorale's head motif (square brackets in Example 3.9). As the two phrases approach their cadences, they become more harmonically driven. The head motif on **fa** is imitated at a fifth on **do**, so that both versions may reflect the scale degrees of the chorale opening ($\hat{1}$-$\hat{1}$-$\hat{7}$-$\hat{6}$-$\hat{7}$…). This scale-degree invariance strengthens rather than clarifies the ambiguity between **Do** and **Fa**. Beethoven closes the first imitative string via a D-minor PAC (complete with its leading tone C♯) (m. 183). The D-minor cadence realizes the tonic potential of the deceptive cadence in the movement's first phrase (m. 6 in Example 3.8) and references the *Neue-Kraft* tonic.



Example 3.9. Beethoven, *Heiliger Dankgesang*, section A3 (mm. 170ff); reduction, head motifs bracketed.[45]

[45] In Example 3.9, Beethoven's half notes are included as full-sized note heads. The focus here is on the harmony towards the cadences. So, at the beginning of phrases, note values quicker than half notes are omitted for clarity; towards the end of phrases, note values quicker than half notes are reduced as smaller note heads.

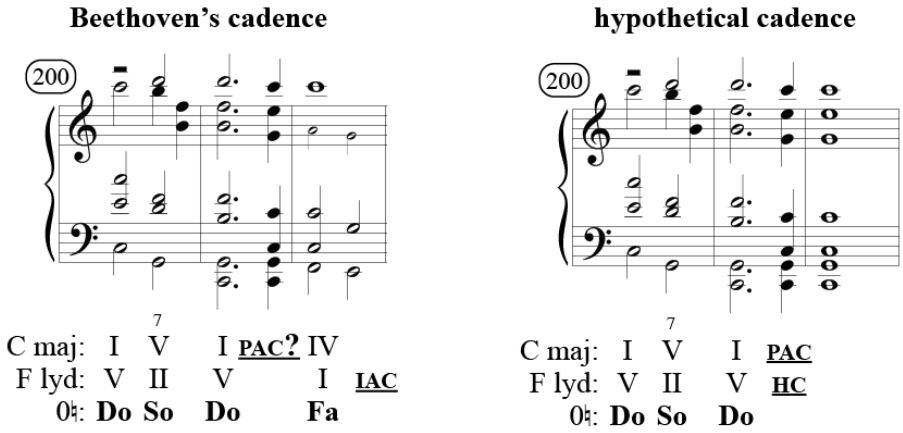
In the second phrase of section A3, the imitative counterpoint reaches a climax at m. 191 on a *forte* **do**-pedal, and then the phrase diminuendos to *piano* at m. 196 as it switches from a contrapuntal texture to a more homophonic texture. The harmonic progression (mm. 196ff) dramatically amplifies the inconclusive lydian final to come: music that leads up to the last chord strongly asserts C major by means of 0♮, **So**^{7} chords, tritone resolutions, and typical C-major syntax. In energeticist terms, the sudden **Fa**-closure is called upon to dissipate the C-major energy accrued over a long twenty-eight-bar phrase (m. 181ff)—and that is more than the **Fa**-close at the very end can achieve. Beethoven's ending, then, is an inconclusive final at its most substantial.

Kerman describes the compositional problem involved here as a "crisis," which Beethoven solves with a "tour de force" conclusion that brings up paradoxical emotions: "But how to end the movement? this is the crisis here, […] Beethoven does the impossible […] he makes his cadence in F, without changing his tortuous scale. It takes many minutes […] It is this *tour de force* that gives the incredible intensity of this final section, the 'passionate serenity' to which Huxley refers" (1952, 48).[46]

Let us examine the *tour de force* cadence. There are two lydian cadential moments towards the end, at m. 202 and m. 209, and, not surprisingly, both of them are preceded by areas of strong C-major emphasis. Before the first cadential moment, mm. 196–197 outlines I-IV-V^7-I in C major and goes on to oscillate between I and V^7 in C major (mm. 198–201), during which the two head motives **do-do-ti** and **fa-fa-mi** overlap to form a tritone resolution to **Do**. The resolution to C, however, only lasts for a quarter note (m. 201). At the next measure (m. 202), the

[46] The *Heiliger Dankgesang* is a central narrative device in Aldous Huxley's *Point Counter Point* (1928).

melody stays on **do**, but the harmony makes a surprising turn to a **Fa** chord. Therefore, rather than a proper lydian cadence, mm. 200–202 is more like a one-beat C-major cadence that quickly evades to its subdominant. Example 3.10 compares mm. 200–202 to a hypothetical C-major PAC that the listener might expect to hear at this juncture. In my recomposition, the triple suspension in m. 201 resolves in m. 202, the quarter note in m. 201 being an anticipation of m. 202. However, the hypothetical C-major cadence would not solve the "paradoxical crisis"—it would convey no "passionate serenity."



Example 3.10. Beethoven, *Heiliger Dankgesang*, mm. 200–202 and my recomposition.

A **Fa** chord ends the piece at m. 209, its stablility and closural power resulting as much from length as from any substantial centric or syntactical strength. This time, the first violin finally rises to the tonic after playing the last head motive. However, simply ending on an F major chord does not make that chord a "tonic" in the conventional music-theoretic sense. Beethoven ends section A3 in a similar way he ended sections A1 and A2, and C major centricity is carried all the way up to the last chord, making for an especially elaborate, prolonged, and dramatic inconclusive final. Mason's description of the ending echoes Kerman's repeated descriptions of the lydian cadence's "impossibility": "The three quarter notes in the fourth

measure from the end may try as they will to override us into supposing ourselves in F, Lydian mode—we just do not believe it" (Mason 1947, 196).

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Open Structures and Chopin's Mazurka in A minor, Op. 17, No. 4

It is quite remarkable that, for a piece the composer labeled *in der lydischen Tonart*, the ending is so radically inconclusive, one that was even too radical for Reicha (Chapter 2). On the effect of *Heiliger Dankgesang*'s inconclusive final, Kevin Korsyn writes that the *Dankgesang* "plac[es] in doubt the familiar opposition of closure and nonclosure" (1993, 158). Korsyn's view of the piece is remarkably similar to Rosen's concept of *Romantic fragment*, which Satyendra later adapts as *open structure*. In Romantic fragments, "[t]he structure is finished in conception, although both beginning and end are open in sound. […] Completely balanced and yet unstable […] The form is not fixed but is torn apart or exploded by paradox, by ambiguity" (Rosen 1995, 48–51). In short, such structures are "complete and provocative, well-rounded and yet open" (Rosen 1995, 418).

Recall the definition of open structure given in Chapter 1:

> ***Open structure*** is the absence of a tonic at a piece or section's boundaries, where a referential off-tonic chord takes the place of the tonic.

The original definitions of Romantic fragment and open structure also include dissonant chords like the diminished seventh; these are sometimes referred to as "dissonant tonics" (Satyendra 1997; Morgan 1976). This dissertation only examines referential triads belonging to the diatonic scale. One such dissonant tonic is the diminished locrian tonic chord, which I will examine in

Chapter 6. Otherwise, all other diatonic triads are consonant. The remainder of this chapter will focus on the use of **Fa** as the referential off-tonic chord.

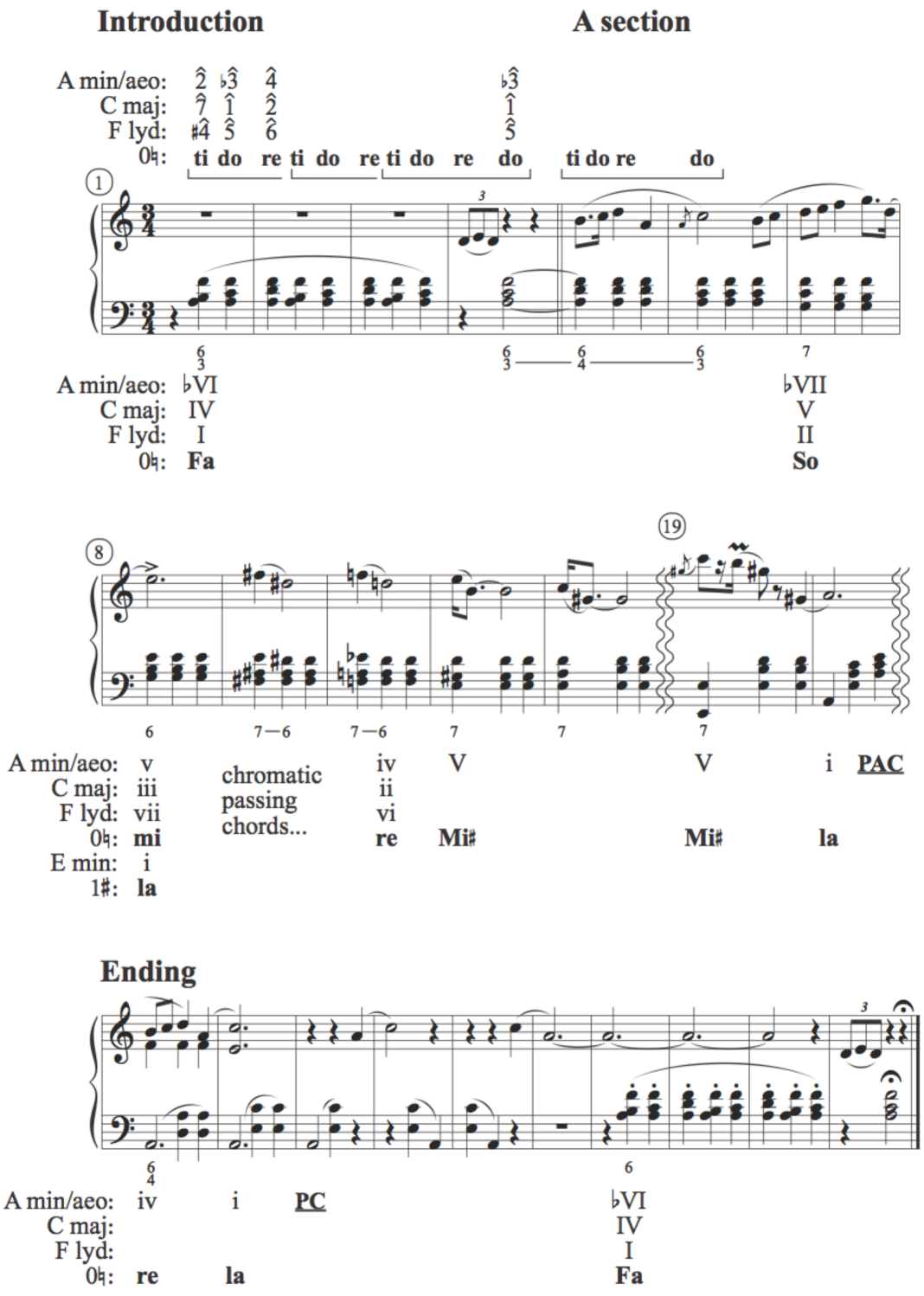
Incidentally, when Rosen wrote the phrase "complete and provocative, well-rounded and yet open," he was describing Chopin's Mazurka in A minor, Op. 17, No. 4 (Example 3.11), a "Romantic fragment" that involves what I have been calling "lydian enclosure" in this chapter. Although the *Dankgesang* is not traditionally thought of as a "fragment," a comparison with Chopin's more radical A-minor mazurka (which was composed around the same time as the *Dankgesang*) shows that the two pieces have more in common than one might initially think.

As Example 3.11 shows, Chopin's Op. 17, No. 4 has an A-minor core that is enclosed on both sides with an embellished **Fa**^{6} chord; and the chordal embellishment (**ti-do-re-do**) of **Fa**^{6} is itself the source of the melody proper (square brackets in Example 3.11). As Rosen writes, the mazurka's opening "Lydian harmony gives an exotic color," but the modal harmony is only "apparent" (1995, 417). The last measures, which sit on the lydian tonic (the last system of Example 3.11), "shake the firm plagal cadence in A minor but not the sense of [A-minor] tonality" (Rosen 1995, 419).

Leonard Bernstein frames Chopin's **Fa**^{6}-enclosure as a "a bliss of ambiguities" in his lecture *The Delights and Dangers of Ambiguity*:

> [M. 1] What key is it in? We don't know with certainty: it's sort of in F; it could be the subdominant of C; it could be the submediant of A minor; it could be the Lydian mode; never mind, it's only the introduction. [m. 5] Now comes the tune. [m. 8] Ah, E minor—there's a possibility. [mm. 8–9] But no—chromatic side-slipping; little dying falls; […] we're nowhere. [mm. 19–20] Ah, at last a cadence in A minor. So it was in A minor all the time!" (Bernstein 1976, 209–210)

However, Chopin provides a "final ambiguous twist […] The piece is over; but what key are we in? Sort of F? Lydian mode? Certainly not A minor. We are left hovering as we began, in a bliss of ambiguities" (Bernstein 1976, 211).



Example 3.11. Chopin, Mazurka in A minor, Op. 17, No. 4, opening (mm. 1–12, 19–20) and ending (last ten measures).

Rosen and Bernstein's use of the word "lydian" acknowledges the tonic status of **Fa**^{6} on some conceptual level. The inverted **Fa** chord resembles a common-practice tonic in two critical ways: it is consonant and it encloses the piece. Both those commenters, however, give stronger preference to A minor because of the many internal cadences in that key. In Figure 3.2, I take another look at the ending of Beethoven's *Dankgesang* through the lens of Chopin's Mazurka. In both, the ending chord could be heard as an appended, unstable **Fa** that is subsidiary to a common-practice tonic (Figure 3.2). In Chopin, the **Fa** chord could be heard as the result of a 5-6 exchange on the A-minor tonic (i.e., **la**$^{[5]\text{-}6}$); in Beethoven, it could be heard as an extra chord appended to a V^7-I cadence in C major.

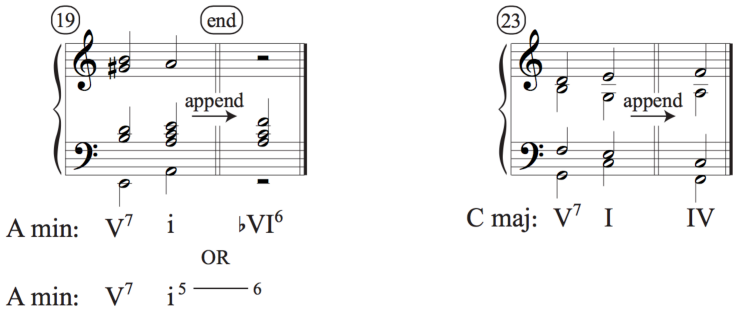


Figure 3.2. Chopin, Mazurka in A minor, m. 19 and the last measure, and Beethoven, *Heiliger Dankgesang*, mm. 23–24; unstable lydian enclosures analyzed as open structures.

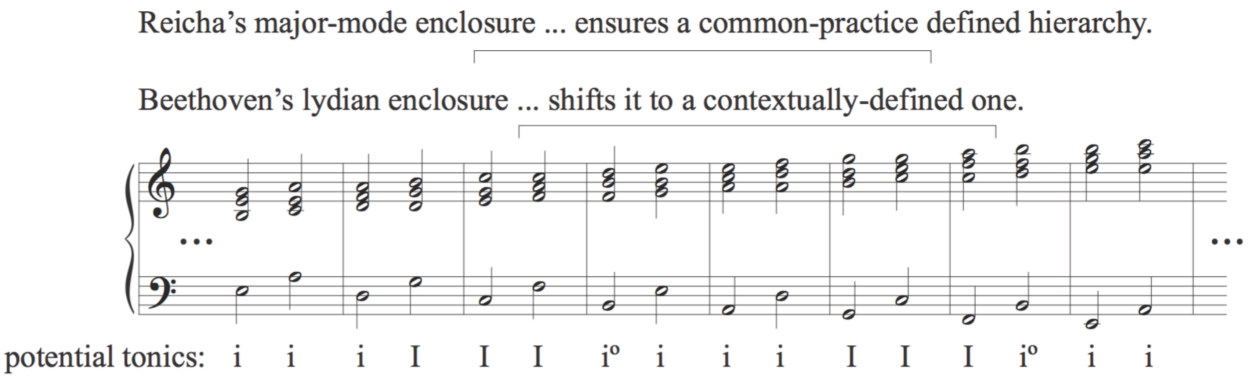
In Satyendra's explication of Rosen's Romantic fragment, he frames it as a paradox and tension between *contextual closure* and *tonal openness* (1997, 193–94). Satyendra argues that "in adventurous tonal works [of late-nineteenth- and early-twentieth-century music], one sometimes can speak neither of an absolutely contextual nor an absolutely tonal style, for the two modalities are often combined—indeed, the playing of one against the other is part of the appeal of this repertoire" (1997, 194).

Taking this view (with Satyendra's "tonal" meaning common-practice major and minor modes), in Chopin's Mazurka, Op. 17, No. 4, F lydian is the contextual, enclosing tonic, and A minor is a common-practice tonic. The fragmentary form comes from (1) the lydian tonic's unstableness, (2) the lack of a lydian cadence, and (3) plentiful A-minor cadences before the lydian tonic. I argue that Beethoven's *Heiliger Dankgesang* anticipates the "adventurous tonal works" that delicately balance contextual closure and tonal openness. The *Dankgesang* has similar but less overt qualities of open structure; the Polish dance and the "Holy Song" sit at fascinating places on a continuum between openness and closedness. From an F-major view of the *Dankgesang*, everything is hierarchically contained: it is tonally and contextually closed. However, from a relative-modal view, F lydian is the contextual, enclosing tonic, and C major is the common-practice tonic. The whiff of fragmentary form comes from (1) the lydian tonic's unstableness, (2) its lack of a strong traditional cadence (recall Kerman's "impossible" cadence), and (3) plentiful C-major cadences (and cadential progressions) before the lydian tonic.

What I wish to problematize is the equivalency of closure and tonicity in Beethoven. I am advocating for a rather uncomfortable (or liberating) view that all non-major/minor-mode closures are always, to some extent, contextual. Perhaps the ontological crisis implied by inconclusive finals was the reason that Reicha prescribed relative, major-mode endings (Chapter 2). In Satyendra's terms *contextual closure* and *tonal openness*, Reicha mandated a major-mode closure, which is contextually and tonally closed. From the perspective of Reicha's theory, then, Beethoven not only liberated the lydian mode from the confines of the major-mode enclosure, but he also made possible contextual closures that are, to many writers, tonally open.

In Chapter 2, I showed how Reicha's Fugue No. 13 realizes his analogy between diatonic sequences and relative-modal tonicization. Now, using an "infinite" descending-fifths sequence,

I draw from Reicha's analogy to summarize the relationship that the kind of diatonic-modal enclosures I have been discussing in this chapter have to common-practice harmony. On this sequence (Example 3.12), a fictional "Reicha" imposes a common-practice **Do**-enclosure to ensure that no paradoxes—such as those Rosen and Satyendra speak of—could exist. Then, a fictional "Beethoven" shifts the enclosure rightwards by one step to **Fa**. This creates context-dependent structures that are closed and open at the same time.



Example 3.12. "Infinite" sequence.

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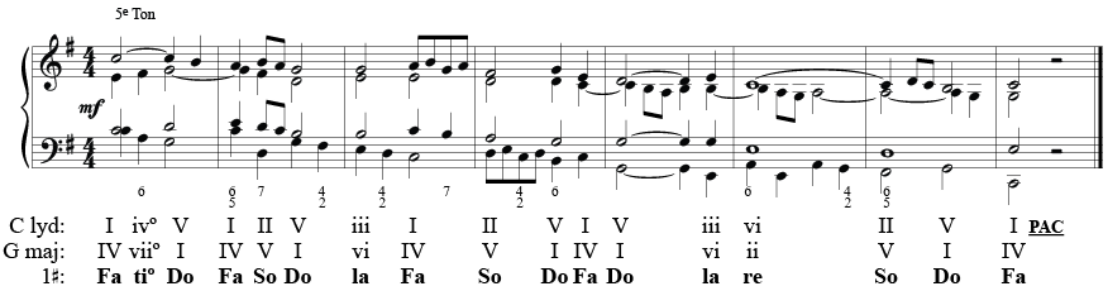
In this chapter, I argued that the lydian mode bridges common-practice harmonic language and diatonic-modal exploration more easily than any other non-major/minor mode. The lydian mode has two kinds of leading tones that other non-major/minor modes do not have: ♭$\hat{7}$ and ♭$\hat{7}$/V, or ♯$\hat{4}$. Because of these readily available leading tones, the lydian mode's characteristic ♯$\hat{4}$ can be assimilated into common-practice harmony. Nevertheless, because of the use of a singular scale, relative modality underpins many "lydian-mode" pieces, allowing a multitude of interpretations beyond the single label *lydische Tonart*.

Chopin's C-major Mazurka explored both assimilated and unassimilated $\sharp\hat{4}$'s within the confines of his C-major enclosure. By contrast, using assimilated $\sharp\hat{4}$'s only, Beethoven writes one of the most expansive and substantial lydian cadences in his *Heiliger Dankgesang*, the inconclusiveness of which is comparable to the "lydian" open structure in Chopin's A-minor Mazurka.

Just as the fictional "Beethoven" in Example 3.12 liberated lydian encloures that were prohibited by Reicha, composers in the following chapters also introduced enclosures using all diatonic positions, effectively shifting the bracket in Example 3.12 to every possible chordal position. Therefore, each chord becomes a potential structural tonic that follow its dominant and predominant. Chapters 4 and 5 only explore the six modes with consonant tonic triads, and even **ti^{o}** can become a dissonant, locrian tonic in Chapter 7.

Chapter 4 : Gregorian Tonality



Example 4.1. Alexandre Guilmant, *Soixante interludes dans la tonalité grégorienne*, Op. 68, No. 31.[47]

While Beethoven used an antiquated form of the lydian mode for new purposes in abstract music (Chapter 3), the same kind of lydian mode—impossible cadences and all—arose in the context of *fin-de-siècle* French Catholic music for practical use. Example 4.1 shows one such example from French organist-composer Alexandre Guilmant's *Soixante interludes dans la tonalité grégorienne*, Op. 68 (1884). This one-phrase interlude features properties described above in connection with Beethoven's *Heiliger Dankgesang*: an explicit "lydian"-mode label (here in numeric form), a common-practice harmonic interpretation of the "lydian mode" that assimilates ♯$\hat{4}$ as the common-practice $\hat{7}$/V, and centric ambiguity between **do** and **fa**. The **Fa**-chord of the 1♯ scale remains inconclusive despite being the final, and much of the music sounds like it is in G major. As heard in the *Dankgesang*, from a common-practice standpoint, tonicizing the dominant extensively can turn the dominant into a new tonic, which effectively shifts the emphasis away from the enclosing tonic. The main difference between Beethoven and

[47] All music in this chapter is composed for organ or harmonium, a smaller free-reed organ without pedals (for more information on the harmonium, see Russell 1970). Because of the music's utilitarian nature, commercial recordings are mostly unavailable for these pieces. Readers may play the pieces on piano to hear the harmonic effect, bearing in mind that, due to its quick decay, the piano produces a drastically different musical effect.

Guilmant's pieces is that centric ambiguity, an effect emphasized as a special narrative and dramatic compositional device in the Beethoven work, is now used in a modest, utilitarian, and unassuming context.

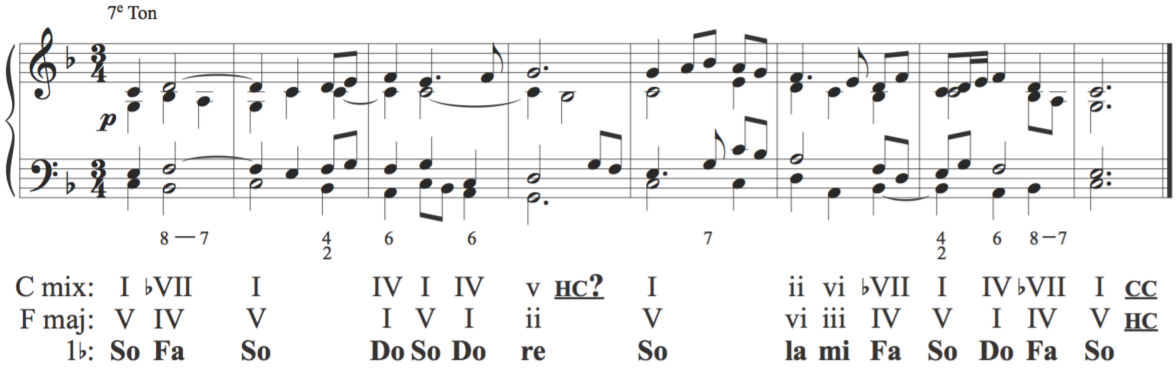
In contrast to Beethoven's lydian one-off, a small group of French and Belgian organist-composers wrote many short, modest, diatonic-modal compositions for liturgy in the years following the nineteenth-century French chant revival. Alexandre Guilmant was one such French organist, and like many of the other composers, he wrote organ and harmonium music labeled "*dans la tonalité grégorienne*" (see again Example 4.1).[48] Such neomodal compositions stood out in these composers' otherwise major/minor mode and sometimes chromatic oeuvres.

This chapter examines the historical background of Gregorian tonality and relative modality in Gregorian-tonal pieces by first-generation adopters Alexandre Guilmant and Eugène Gigout. Gregorian tonality is significant for its direct theoretical lineage from medieval and Renaissance 8- and 12-mode systems (see Chapter 1). French scholars continued to develop new, practical modal theories for the church beyond the eighteenth century. Gregorian tonality also directly influenced the Parisian circle of composers across many decades, including Liszt, Fauré, and Satie. Music labeled Gregorian tonality was short-lived, flourishing between the late

[48] Notable musical works under the label "*dans la tonalité grégorienne*" include Guilmant's *Grand chœur en forme de marche dans la tonalité grégorienne*, Op. 52 No. 2 (1878), *Soixante interludes dans la tonalité grégorienne*, Op. 68 (1884); Léon Boëllmann's *Canzona dans la tonalité grégorienne*, Op. 16 No. 10 (1891); and Fernand de La Tombelle's *Interludes dans la tonalité gregorienne et harmonization des versets pour la messe: «*Dominicis infra annum*»* (1897?). Eugène Gigout composed practice collections of organ music that contained music in Gregorian tonality. Evident from the titles, the term *tonalité grégorienne* was interchangeable with other terms such as *tonalité du plain-chant* and *modes grégoriens*. Gigout's Gregorian-tonal works include *Quatre interludes dans la tonalité ancienne* (1881?)**,** *Cent pièces brèves dans la tonalité du plain-chant* (1888)**,** *Album grégorien* (1895)**,** *L'Orgue d'église* (1904)**,** *Quatre pièces brèves dans la tonalité grégorienne* (1910?)**,** *Soixante-dix pièces dans les tons les plus usités et dans les modes grégoriens* (1911), and *Cent pièces brèves nouvelles dans tous les tons les plus usités et dans les modes ecclésiastiques* (1921).

nineteenth and early twentieth century (see footnote 48) and eventually supplanted by impressionism and modernism, as seen in the music of Messiaen, Tournemire, and Duruflé in the mid-twentieth century. But the legacy of Gregorian tonality is realized to this day in organ improvisation, and it can still be regularly heard at French Catholic churches.

Gregorian-tonal music is important to the study of relative modality for three main reasons. First, relative modality is "native" to Gregorian tonality, in the sense that the shifting tonic of relative modality is accepted as the stylistic norm. Gregorian tonality was not employed as a novel artistic experiment, but as a utilitarian liturgical practice that generated hundreds of short modal pieces. Second, Gregorian tonality involves a rich network of overlapping chant theories, chant accompaniment theories, and common-practice harmony—a network of associations that are indispensable for understanding Gregorian tonality. Third, composers used all consonant modes in Greogrian tonality, making it easy to compare the effects of different modes as used by the same composer in different pieces.



Example 4.2. Guilmant, *Soixante Interludes*, Op. 68, No. 50.

With regard to the third reason described above, it is instructive to compare and contrast Examples 4.1 and 4.2, which are from the same set of interludes. Example 4.2 is labeled in the 8-

mode "*7e Ton*" (Mixolydian mode). From the perspective of the enclosing mixolydian tonics, the interlude features ♭VII in the opening neighboring progression I-♭VII-I, and in the cadential progression IV^{6}-$♭VII^{8–7}$-I. While the C-lydian piece (Example 4.1) can be interpreted as a common-practice C-major piece with secondary dominants, the C-mixolydian interlude from the same volume of music cannot, because there is no way to assimilate the ♭$\hat{7}$ into common-practice harmony within a ♭VII-I progression. Despite this difference, the two pieces have an important commonality: each can be comfortably heard in its relative major mode, and the push-and-pull between relative modes is ever present.

From a diatonic-position perspective, Example 4.2 shifts emphasis from **Fa** to **So** while maintaining mostly major-mode syntax. If Example 4.1 ends on I-IV (like Beethoven's cadence), then the mixolydian cadence in Example 4.2 (IV^{6}-♭$VII^{8–7}$-I) could be heard as a relative major-mode half cadence (I^{6}-$IV^{8–7}$-V), creating centric-final incongruity and a possible open structure. In m. 4, what seems to be the enclosing mixolydian mode's half cadence (or, at least a mid-phrase dominant pause) is a strange lingering on **re** that does not produce the same effect of a major-mode half cadence on **So**. The lingering on **re** could also be a dorian tonicization—the same progression (**So**-**Do**-**re**) that concludes the dorian-enclosing B section of Holst's Intermezzo (Chapter 1).

So, Examples 4.1 and 4.2 are revealing for several reasons: first, they suggest that aspects of relative modality are typical of Gregorian tonality, at least within Guilmant's interludes; second, they suggest how hierarchical assimilation is secondary to relative modality in this repertoire; third, beyond modal attributions, this music hardly relates to Gregorian chant or Renaissance modality beyond mere labels on the score. Rather, they showcase the extension of common-practice tonality through scales.

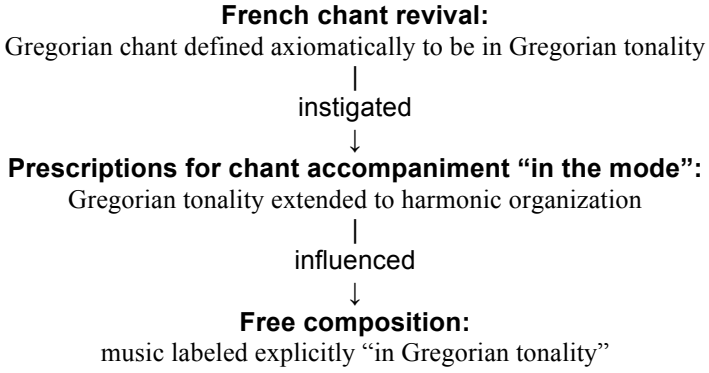


Figure 4.1. Summary of the development of Gregorian tonality in the nineteenth century.

Figure 4.1 diagrams the organization of this chapter. I will begin by reviewing three stages of development in the nineteenth century that led to music in Gregorian tonality. The first stage is the chant revival, which sought to restore chants corrupted by "modern" music. The second stage is the creation of a chant-accompaniment theory that promoted a new outlook on chant and that extended monophonic chant-tonality to harmony. The third stage is the main focus of this chapter— organist-composers wrote liturgical music in response to new chant-based harmony. Scholarship specifically on the history of nineteenth-century modal theory is relatively scarce. Therefore, I will take care to introduce the historical and theoretical background in the next section, in order to establish a link between the labeled liturgical modes (e.g., *5e* and *7e Ton*) and the diatonic modes as we more commonly understand them today.

***

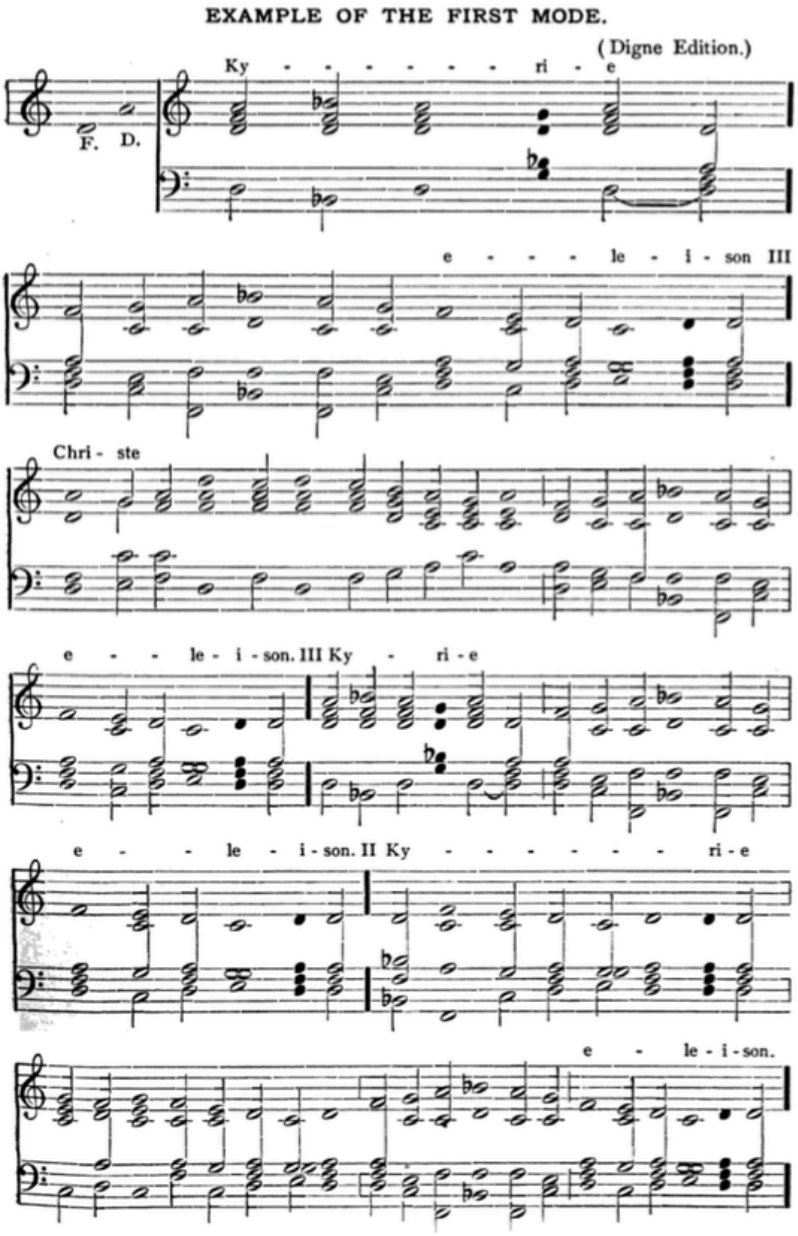
Nineteenth-Century Chant Revival and Restoration

Assuming the broadest sense of "tonality" as pitch organization, monophonic Gregorian chant would embody Gregorian tonality axiomatically.[49] However, the term "Gregorian tonality" was rarely used in that sense by composers in the late nineteenth and early twentieth centuries. Instead, it described music that was composed according to a prescriptive reformulation of church modes that originated in Niedermeyer and d'Ortigue's watershed chant accompaniment treatise *Traité théorique et pratique de l'accompagnement du plain-chant* (1857). (In this chapter, I will refer to Goodrich's English translation of the *Traité*, *Gregorian Accompaniment,* as *GA*).

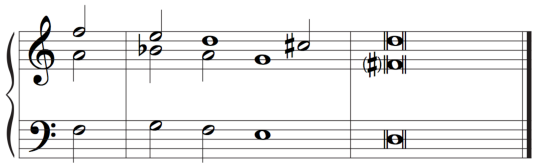
As d'Ortigue states in the preface of the treatise, the conception for the theory mostly came from Niedermeyer (*GA*, v). Being the editor for the magisterial *Dictionnaire liturgique, historique et théorique de plain-chant* and an advocate for *unaccompanied* chant, d'Ortigue's position as a co-author would have boosted the theory's authority (1853). Gigout provided the treatise's accompaniment examples in the appendix; later, he continued his harmonization work and published the three-volume, fully harmonized *Chants du graduel et du vespéral romains* (1875).

Niedermeyer and d'Ortigue's fundamental idea was that chant be "harmonized by its own tonality. In other words, ecclesiastical tonality possesses such powers that one can derive from it a harmony *sui generis*, of its own kind" (*GA*, ix). Example 4.3 is a harmonization of Kyrie, *Orbis factor* from the treatise (*GA*, 25). The most striking feature of this accompaniment is the lack of raised leading tones (C♯) at the cadences, which would typically be harmonized as Example 4.4.

[49] See Hyer 2002 for an overview of the multifaceted uses and implications of "tonality."

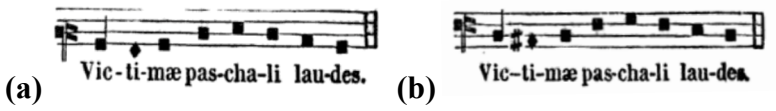


Example 4.3. Gigout, harmonization of Kyrie, *Orbis factor* (*GA*, 25).



Example 4.4. Prototypical Dorian cadence in Renaissance counterpoint.

This omission of raised leading tones and other prescriptions originated in the early years of the chant revival. In 1801, Napoleon and Pope Pius VII signed a concordat that gave the Catholic Church official state status in France. The concordant led to a liturgical reform that realigned French practices with the Roman rite. Liturgical unification and an idealization of the past led to the restoration of chant to its ideal, medieval, "Gregorian" form by influential scholars such as Fétis, Danjou, and Choron (Apel 1990, 3).



Example 4.5. Two renditions of *Victimae paschali laudes.*

One of the "corrections" made during the chant revival is the ban on raised leading tones in monophonic chant. The harmonization in Example 4.3 inherited the rules from revised monophonic practices and expanded the prohibition to *musica ficta* in general. In the inaugural issue of *Revue de musique religieuse*, Fétis criticizes how mode-1 and -2 chants (Example 4.5a) are usually erroneously sung with the raised leading tone C♯ (Example 4.5b) (1845, 29).[50] Musicologist La Fage discusses the same issue for G♯ to A. He describes G♯ as "a misplaced imitation of modern music which should not be endured at all, as it introduces an absolutely foreign degree to the scale of the old mode and soon leads, as we will see, to other alterations" (Day-O'Connell 2007, 118). Despite a long history of *musica ficta* since the fourteenth century,

[50] "C'est donc à tort, sous tous les rapports, que, dans les temps modernes, on a impirimé des éditions de l'antiphonaire et du graduel où l'on trouve, par exemple, des terminaisons de pièces du premier ton ainsi formulées: [D C D D] qui, dans l'exécution habituelle, se transforment en celle-ci: [D C-sharp D D]" (Fétis 1845, 29).
"Il est également incontestable qu'on doit chanter la note inférieure de la finale, dans les conclusions, comme elle est écrite, et non en l'altérant" (Fétis 1845, 109).

La Fage explicitly connects the raised leading tone to "modern" harmony. In d'Ortigue's view, even sixteenth-century modal polyphony was too "modern." D'Ortigue argues that in sixteenth-century polyphony, "[a] sense of the major or minor mode is almost constant, with the effect of modern cadences in the terminations of the various periods"; therefore, "through the numerous alterations in the tonality their compositions present a new tonality on the eve of its birth" (*GA*, vi).

The prohibition of leading tones was not, however, a purely historical endeavor; it was also deeply rooted in the what was considered to be a problematic "secularization" of church music at the time. Church musicians denounced the liturgical use of dances and operatic arrangements (such as arias by Mozart and Rossini), and consensus was that the quality of church music in France was less than ideal (Ochse 2000, 121–26; Van Wye 1974, 7). It was under these circumstances that elements of common-practice harmony such as chromaticism, the raised leading tone, and the tritone became conflated with secularism in the church (Day-O'Connell 2007, 117–19). Many examples of this discourse are scattered throughout *GA*. Stated most succinctly in a discussion about F♯ in the Mixolydian modes, Niedermeyer asks rhetorically: "If some musicians make use of the half-tone so naturally and *without* reflection, does it not imply that in their methods they are susceptible to the influence of secular tonality?" (*GA*, 52). Niedermeyer essentially equates the use of F♯ with the secularization of liturgical music.

It is somewhat surprising that a historical movement which looked back to medieval sources led to radically new harmony. The development of *ficta*-less harmony required a crucial compromise: if medieval chant were the ideal model for restoration, then there would be no further development to speak of, since monophonic chant needed no accompaniment in the first

place. Yet, because monophonic chant was too austere for the public, even the most conservative advocate d'Ortigue allowed an unobtrusive harmonization, provided it followed Niedermeyer's rules (*GA*, ix).

Niedermeyer's theory was widely circulated after its publication, since it was part of the compulsory training at the *École de Musique Classique et Religieuse* (later renamed École Niedermeyer), where Gigout also taught. This led to rapid dissemination of the theory as his students took up church and teaching positions.[51] Niedermeyer's treatise became foundational for all ensuing chant accompaniment theories, and it marked a watershed moment in nineteenth-century modal theory (Ochse 2000, 134–35; Viret 2001, 175; Gonnard 2000, 31–39; Van Wye 1974; 1982).

Until the early twentieth century, the *Traité* was up-to-date with musical practices of the time. Wallace Goodrich states in the preface of *GA* that "[n]early half a century has elapsed since this treatise was written. If any excuse for its translation after so long a period were necessary, it would be that since its completion has appeared no better work upon the subject" (*GA*, iii).[52] In the early twentieth century, Saint-Saëns stated that "[Niedermeyer's] system has made its way throughout France, and has even overpassed its aim by showing the possibility of introducing the ancient Modes into modern Harmony, thus enriching it in an unexpected manner" ([1916] 1991,

[51] Scholars have traced Niedermeyer's influence on a number of composers in the Parisian circle. See Kidd 1973, Greer 1991, Wilheim 1983, and Merrick 1987.

[52] As a point of interest, the most sophisticated chant accompaniment theories, such as Henti Potiron's *Practical Instruction in Plainsong Accompaniment* (1949), are based on the same principles of using *musica recta* alone. The main refinements in these works are hexachordal sensitivity, large-scale linear motion, and treatment of irregular meter and non-chord tones brought about by Solesmes's flowing and supple singing style.

21). In a mid-twentieth century evaluation of chant accompaniment, Francis Potier calls Niedermeyer's treatise "the most important work devoted to accompaniment" (1946, 72).[53]

***

New Chant-Accompaniment Theory

Niedermeyer's goal was to derive from chant "a harmony *sui generis*." The treatise opens by outlining six fundamental rules, and subsequent chapters treat their application in each of the eight modes. The rules are as follows:

> "1. The exclusive use, in each mode, of notes of the scale. ...
> 2. The frequent use of the triads of the final and dominant in each mode. ...
> 3. The use exclusively of the harmonic formulae proper to the cadences of each mode. ...
> 4. Every chord other than the consonant triads and their first inversions should be barred from plainsong accompaniments. ...
> 5. The laws which govern plainsong melody must be observed in each of the accompanying voices. ...
> 6. Since the melody is the essential of plainsong, it should always be placed in the upper voice" (*GA*, 14–16).

Rules nos. 4–6 essentially describe first-species (four-voice) counterpoint with the chant in the top voice. Below, I will discuss the theoretical implications of rules nos. 1–3, to which I have given shortened names: these are, in order, the *rule of scalar constraint*, the *rule of harmonic emphasis*, and the *rule of modal cadences*. I will show that the rule of scalar constraint redirected liturgical modality to *musica recta* alone, that the rule of harmonic emphasis is only loosely enforced, and that the rule of modal cadences essentially avoids traditional, major/minor mode cadences or references thereto whenever possible.

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[53] "C'est à cette époque le plus important des ouvrages consacrés à l'accompagnement. Il est dû à Niedermeyer, fondateur de la célèbre Ecole de musique religieuse qui porte toujours son nom" (Potier 1946, 72). Like all watershed theories, there were lesser-known predecessors. A similar theory by Jacques-Nicolas Lemmens was circulated in the 1850s. This was later republished posthumously as *Du chant grégorien, sa mélodie, son rythme, son harmonisation* (Ghent: Duclos, 1886). Niedermeyer, d'Ortigue, and other organist-composers may have come into contact with Lemmens's theory, though Lemmens's wider influence is doubtful. See Osche 1999, 175ff for a historical overview.

Rule No. 1 (Rule of scalar constraint). Rule No. 1 lays down the scalar and modal foundation of the theory. Rule No. 1 allows only notes from the Guidonian gamut (Figure 4.2), which is, roughly put, a relative-pitch system of white-key notes and B♭ that could be realized at any transposition. The hexachordal syllables (*ut* to *la* on C, F, and G) fix the interval of the letters, so that there are two versions of the letter b: *b mi* (B♮), and *b fa* (B♭). In writings up to the fourteenth century, *musica recta* ("true" or "correct" music) refers to notes on the gamut, and *musica ficta* ("false" or "feigned" music) notes that are not on the gamut (Bent 2002; Berger 1987; Cohen 2002). The rule of scalar constraint essentially redirects liturgical music to *musica recta* alone by prohibiting *musica ficta*.

littera	*voce*						
ee							*la*
dd						*la*	*so*
cc						*so*	*fa*
♭♭/♮♮						*fa*	*mi*
aa					*la*	*mi*	*re*
g					*so*	*re*	*ut*
f					*fa*	*ut*	
e				*la*	*mi*		
d			*la*	*so*	*re*		
c			*so*	*fa*	*ut*		
♭/♮			*fa*	*mi*			
a		*la*	*mi*	*re*			
G		*so*	*re*	*ut*			
F		*fa*	*ut*				
E	*la*	*mi*					
D	*so*	*re*					
C	*fa*	*ut*					
B	*mi*						
A	*re*						
Γ	*ut*						

Figure 4.2. The Guidonian gamut.

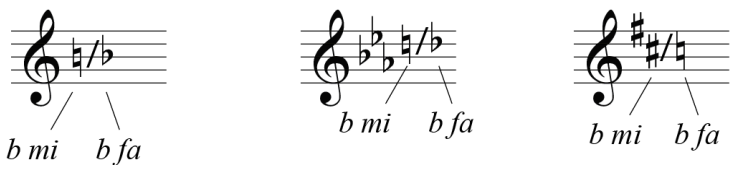

Figure 4.3. Reconceptualized gamut according to nineteenth-century notational practice.

To capture the practical, orthographical representation of the gamut in notated chant accompaniment and freely composed organ music, I have reorganized *musica recta* for Gregorian tonality in staff notation (see Figure 4.3): two diatonic scales an accidental apart define the entire range of notes possible, and the changeable note represents *b mi* and *b fa*. There are three main differences between my reconceptualised gamut and the traditional Guidonian gamut. First, the reconceptualized gamut loses registral distinction: in practice, chant harmonization and free composition are not bound by the gamut's relative pitch range. Second, hexachordal solfège loses its practical usage. By the nineteenth century, the French had long adopted fixed heptachordal solfège, and *GA* makes little mention of hexachordal solfege.[54] Third, the diatonic scale becomes prevalent at moderate spans of music not only because *b mi* and *b fa* cannot coexist in proximity in monophonic chant, but also because, in practice, tertian harmony quickly introduces all remaining scale members.

What I have outlined above constitutes the background, total pitch-class universe of Gregorian tonality. The prohibition of *musica ficta* cemented *musica recta* as the only notes possible. Diatonic macroharmony and octave equivalence reinterpret the gamut—or *musica*

[54] For a contemporaneous view on hexachordal solfège, see the entry on hexachordal mutations (*muances*) in d'Ortigue 1953, 885–87.

recta—as two diatonic scales one accidental apart, and it is within this universe that modality is defined.[55]

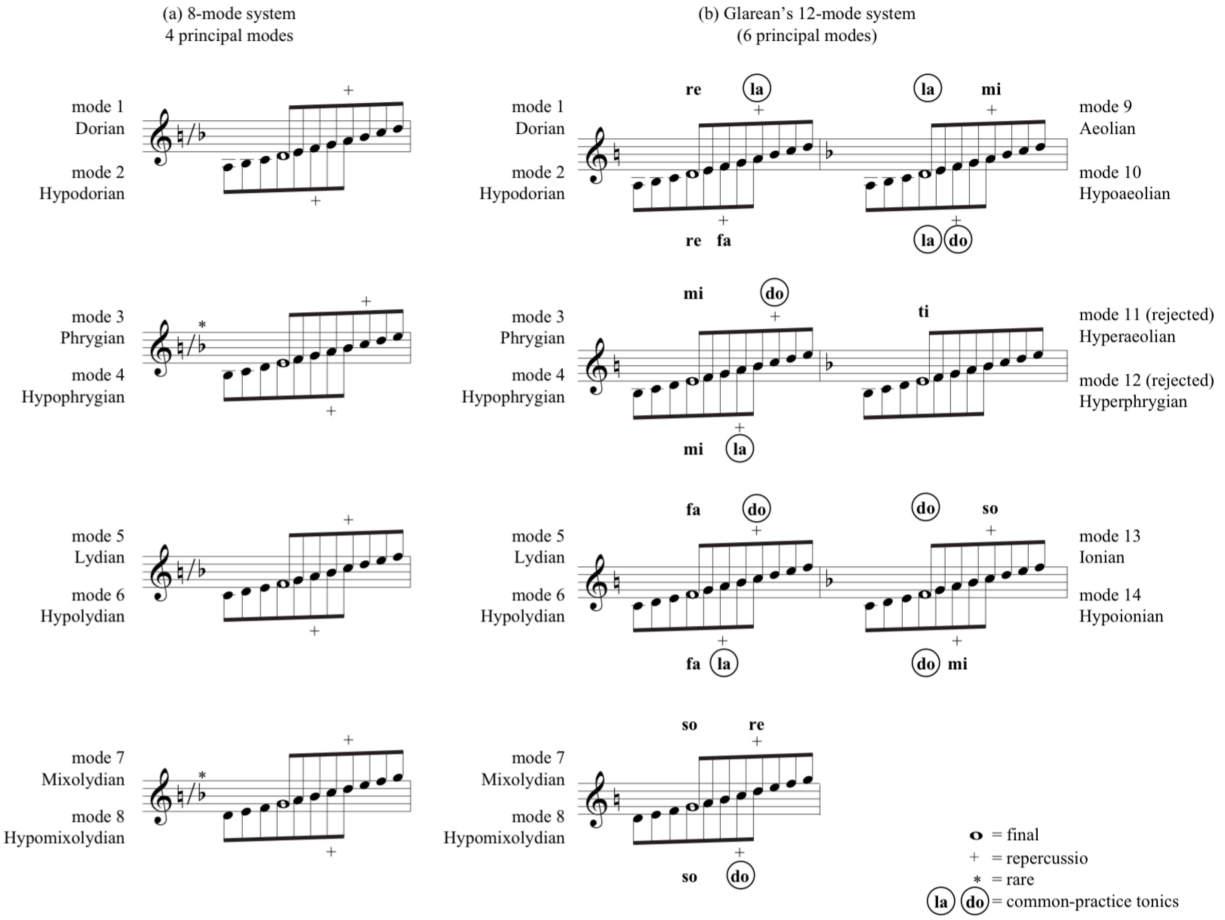

Figure 4.4. The 8- and 12-mode systems.

Niedermeyer's accompaniment theory rests on a conglomerate 8-mode system that encompasses both chant and psalm tones.[56] Within the 8-mode system, the 12-mode system is a

[55] What I have called collection and mode correspond to Niedermeyer's idiosyncratic definition of *tonality* and *modality*, respectively (*GA*, 10). In other words, *tonality* refers to the background usable collection, and *modality* means the use of notes within the collection. Music "in Gregorian tonality," however, necessarily implies the use of modes as well.

subsidiary, more specific system. Figure 4.4 shows this by combining *GA*'s numbering system with Figure 1.1 in Chapter 1. The bulk of *GA* is organized in eight modes with the occasional 12-mode remark when B♭ is used. The numbering system adopted is actually a 14-mode system instead of a 12-mode one. This is because the numbering includes the previously rejected Hyperaeolian (or "Locrian") and Hyperphrygian modes (or "Hypolocrian"), so that Ionian and Hypoionian modes (Glarean's modes 11 and 12) are numbered 13 and 14, respectively. But because the underlying thoeretical system is the same as the more familiar 12-mode system, I will continue to refer to Niedermeyer's chosen 14-mode system as the "12-mode system."

In this chapter, when I discuss modes, I will refer to the 8-mode system by default. I will refer to the collapsed authentic-plagal modes by their principal mode name. For example, the 8-mode modes 1 and 2 are the Dorian modes, modes 3 and 4 are the Phrygian modes, etc. I will not refer to the 12-mode system unless circumstances specifically require doing so, or when the *GA* numbering goes beyond 8.

The Dorian and Lydian modes could use both *b fa* and *b mi*, the entire spectrum of the gamut, and the Mixolydian and Phrygian modes usually use *b mi* only. Figure 4.4 above also shows that, using *b fa*, composers would have access to the natural minor and major mode through the Dorian and Lydian modes, respectively.

Following rule No.1, which restricts notes within the Guidonian gamut, rules Nos. 2 and 3 establish modal-specific distinctions within the gamut. The French theorists retained ambitus distinction, since the target repertoire was monophonic chant instead of abstract harmony or polyphony. As I will discuss in more detail below, for French composers (not theorists), freely composed music implied the collapse of authentic and plagal modes.

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[56] See Powers et al., n.d. for an overview and d'Ortigue 1853 (x–xiii) for a contemporaneous account of modal theory.

Rule No. 2 (rule of harmonic emphasis). Rule No. 2, "[t]he frequent use of the triads of the final and dominant in each mode," reinforces differences between modes in the accompaniment. I will use the term *repercussio* in place of what *GA* calls *dominant* to avoid confusion with the dominant scale degree. Repercussios are marked with "+" in Figure 4.4; besides the emphasis of triads built on the final, rule No. 2 also asks for triads built on the repercussio note, which I will refer to as a *reprecussio chord* below. Besides a chant's inherent ambitus, rule No. 2 is the only rule that distinguishes authentic and plagal modes; in other words, the mode of the chant should be apparent from the chords emphasized.

However, in Gigout's examples in *GA*, rule No. 2 is only loosely applied. Few repercussio chords are found, so there is little difference between authentic and plagal modes. This can be seen in Example 4.3 above: in mode 1, the harmony should emphasize D minor, the final, and A minor, the repercussio, yet there are very few instances of A minor chords.

Rule No. 3 (rule of modal cadences). Rule No. 3 concerns "the use exclusively of the harmonic formulae proper to the cadences of each mode," and the same rule applies to both authentic and plagal modes. Figure 4.5 shows the cadences in Dorian modes, with cadential pre-tonic (or syntactic "dominant") chords labeled.[57] Combined with the loosely enforced rule No. 2, which asks for the frequent emphasis of repercussio chords, there is little authentic-plagal distinction in the harmony. For Niedermeyer, the chief goal of the cadential prescriptions is to avoid any association with common-practice harmony, and therefore to avoid secularity. For Dorian modes, Niedermeyer prefers ♭VII and even ♭III cadences as opposed to V chords or even a minor-mode v chord. Since cadences are no longer marked by raised leading tones in formulaic

[57] Examples taken from *GA*, 23–24.

harmonic or contrapuntal progressions, cadences are defined contextually by phrase endings in the chant.

Two common cadential harmonies, the Picardy third and V^7 (in any mode) are also banned. Whereas rule No. 1 (the rule of scalar constraint) forbids the Picardy third because it invokes *musica ficta***,** rule No. 4 forbids V^7, since it permits the use of root position and first inversion triads only. Niedermeyer especially cautions against the use of V^7, calling the modern nature of V^7 "antipathetic to plainsong" (*GA*, 18).[58]

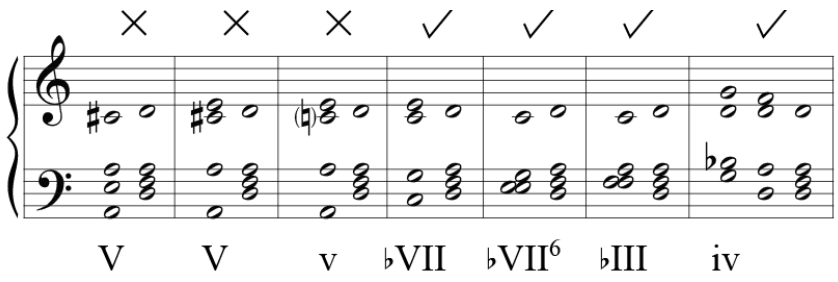


Figure 4.5. Dorian cadences in *GA*.

To summarize Niedermeyer's rules, the first-species four-voice harmonization is confined to *musica recta* without octave and hexachordal distinction. Rules No. 1 and 3 remove two common-practice elements essential to key-finding: raised leading tones, conventional cadences, and even cadences resembling conventional cadences. And, rule No. 2 is loosely enforced, meaning that, in harmony, very few chords distinguish plagal and authentic modes. The resulting harmony must have sounded quite new to mid-nineteenth-century ears. As Niedermeyer describes, "it is to be hoped that the strange effect of these harmonies produced

[58] Niedemeyer and d'Ortigue's description of the V^7 also alludes to Fétis's association of the tritone (the appellative consonance) with "modern tonality" but they do not reference him directly (Fétis [1844] 2008, 21).

upon their ears will be but a passing impression; for we are convinced not only that they will soon become accustomed to them, but that they will eventually conceive a liking for them" (*GA*, 39). While these "strange effects" were initially confined to chant and first-species counterpoint, Guilmant and Gigout's free compositions bring the "strange effects" to life in fully phrased melody and harmony.

***

Guilmant and Gigout's Free Compositions

Composers responded to the chant accompaniment theory with new music in a correspondingly new tonality. Guilmant and Gigout wrote many pieces for *alternatim* performance, in which versets replace chant verses with organ music (more advanced organists would simply improvise a verset) (Van Wye 1982, 193–94). In the preface to *Album Grégorien*, Gigout articulates the rationale for composing in Gregorian tonality:

> "if, I say, thanks to the work of Niedermeyer, liturgical tonality is generally the basis of chant accompaniment today, it is unfortunately not in common use to play purely Gregorian pieces at the organ yet. In dialogues that established themselves between the choir and the organ, the latter seems to only know our two major and minor modes, whereas the basic modes rule the lectern [i.e., the choir]" (Gigout 1895, i).[59]

Gigout wrote many modal collections, and his versets range from just three measures to thirty-two measures. Gigout's versets are free-spirited and imaginative, and he valued the new Gregorian tonality for its expressive potential and for its capacity to meld with many different styles. In his pieces, he sought "the variety of musical expression in Gregorian tonal unity"

[59] "…si, dis-je, grâce aux travaux de Niedermeyer, la tonalité liturgique sert généralement de base aujourd'hui à l'accompagnement du plain-chant, il n'est malheureusement pas encore d'un usage courant d'exécuter à l'orgue des pièces purement grégoriennes. Dans les dialogues qui s'établissent entre le chœur et l'orgue, ce dernier semble ne connaître que nos deux modes majeur et mineur, tandis que les modes primitifs font loi au lutrin" (Gigout 1895, i).

(Gigout 1888, i); his stylistic borrowing ranges from Renaissance counterpoint to Romantic lyricism.[60]

Below, I will examine four pieces in Gregorian tonality: three versets of moderate length by Gigout, and an expansive piece by Guilmant. In my discussion, I will emphasize the importance of transposition procedures: in longer pieces in Gregorian tonality, composers often use transposition as a central device for maintaining musical interest within the gamut. Transposition of musical cells maintains motivic and thematic unity and also allows a composer to accesses a variety of tone centers and repercussio chords at the same time, creating a rich web of relations otherwise unavailable in major/minor harmony.

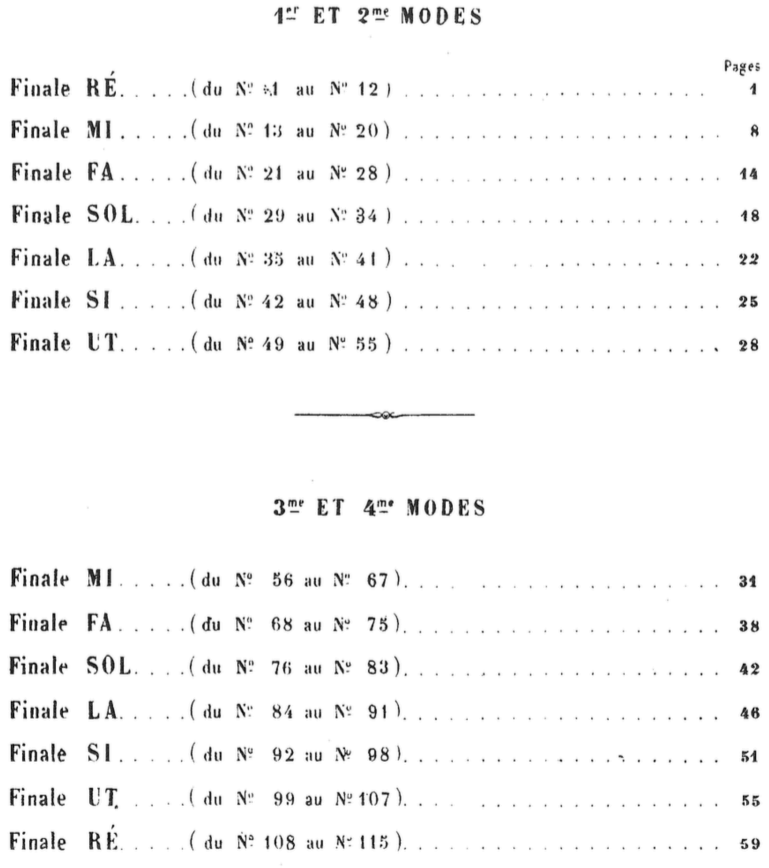
Album grégorien, No. 96

Gigout's modal collections are sorted by principal modes. As the table of contents from *Album grégorien* (1895) shows (Figure 4.6), he explicitly collapsed authentic-plagal modes in the 8-mode system ("*1er et 2me modes*"), although he retains the dual numbering to pair them with ambitus-distinct chant. No. 96, shown in Example 4.6, is written in modes 3 and 4 on B with emphasis on the modes 3 and 4 repercussios (Table 4.1). The plagal and authentic repercussios are also the common-practice tonics, making the theoretical associations particularly rich and suggestive.

The first bar of No. 96 actually begins with the **mi**-final on a **la**-chord, the mode-4 repercussio chord. The phrase continues by oscillating between **mi** and **la** chords until the

[60] "Je n'ai pas songé, davantage, à donner à chaque morceau de ce recueil un caractère purement scolastique. Chercher, dans l'unité tonale grégorienne, la variété de l'expression musicale, tel est le but que cet ouvrage s'est proposé d'atteindre. On trouvera donc, à côté de certaines pièces empreintes d'un sentiment moderne prononcé, des morceaux basés sur de simples procédés contrapontiques" (Gigout 1888, i).

cadence on **mi** at m. 4. From the perspective of **mi**- and **la**-tonics, the entire verset either begins or ends off-tonic. In other words, the first phrase's structural boundary is that of the verset in microcosm. Within the **mi**-enclosure, however, the major tonic **Do** dominates the remainder of the verset after it is introduced in the second phrase.



1er ET 2me MODES

3me ET 4me MODES

Figure 4.6. Gigout, *Album grégorien*, partial table of contents.

Table 4.1. Gigout, *Album grégorien*, Piece No. 96, diatonic positions and their associations.

modes 3 and 4 on B in 1♯

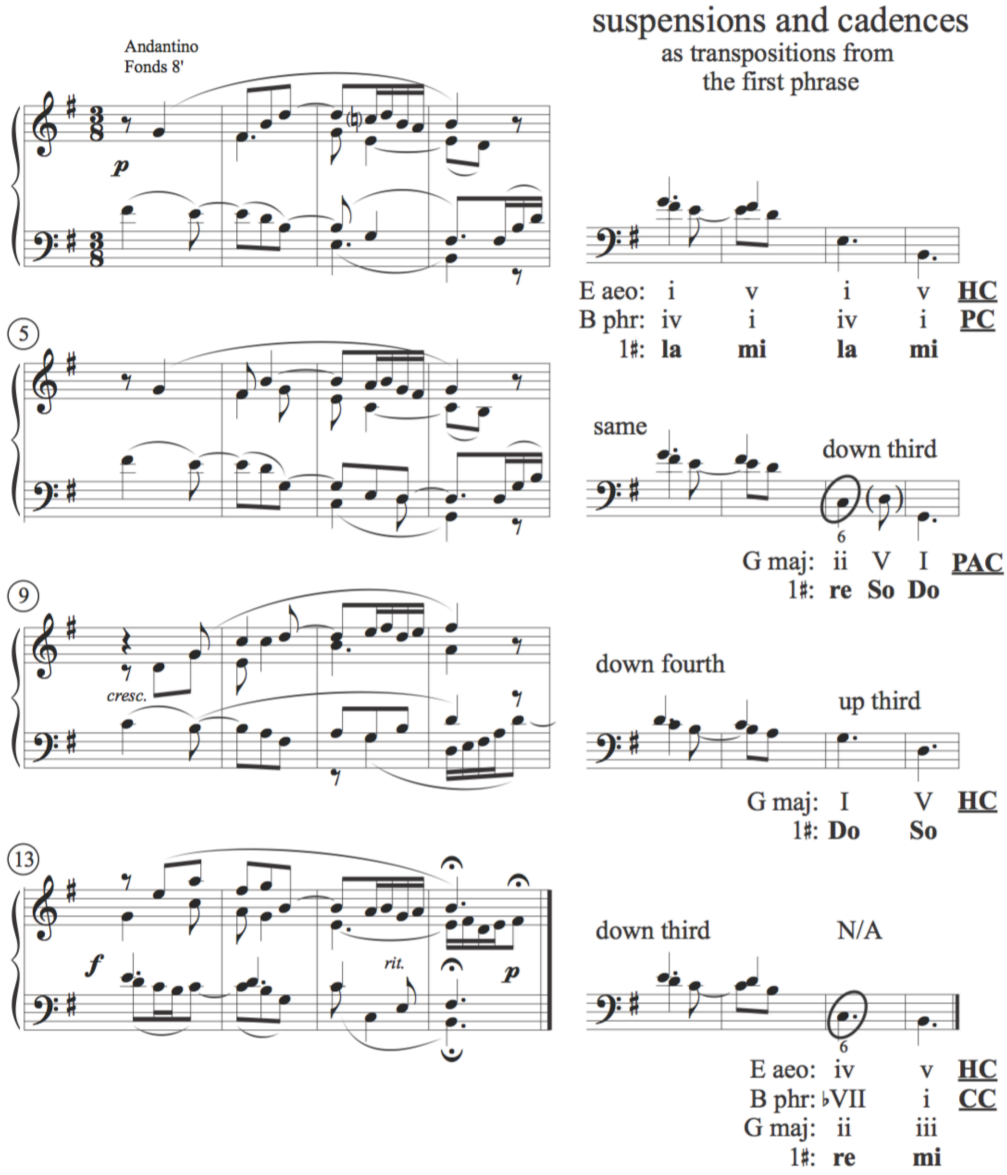
B-**mi**	final
G-**do**	plagal repercussio, major-mode tonic
E-**la**	authentic repercussio, aeolian tonic

The right side of Example 4.6 isolates the suspensions and cadences to better demonstrate the effects of transpositions. I will focus on the cadences, since they have the greatest effect upon local tonics. The cadence in the first phrase could be heard as a phrygian tonic or minor dominant; the subsequent transpositions up and down a third realize both scale degrees in the more stable major mode. The second phrase emphasizes **Do** by transposing the second half down a third so it ends on the major-mode tonic instead of the phrygian. Moreover, instead of a major-mode plagal IV-I cadence, Gigout inserts a penultimate **So**-chord to make a full cadential progression IV-V-I. Unlike the first phrase, the second phrase ends conclusively in the major mode as a result of this transposition.

While the second phrase may have more in common with a phrygian hearing of the first phrase, the third phrase has more in common with an aeolian hearing. Transposing a **mi**-ending to a **So**-ending make it sound like a half cadence, especially after a major-mode full cadence. In this view, both the first and third phrases end inconclusively with a dominant chord. Rather like Reicha's fugue (Chapter 2), the diatonic transpositions of cadences act independent of tonics, creating complex relations that are more than the sum of their parts.

One might expect **mi** to return at the beginning of the last phrase. Yet Gigout opts to continue emphasizing **Do** in the last phrase such that the penultimate chord—the downbeat **re**^{6} chord—can still be heard in the major mode. Another downbeat **re**^{6} chord in the same metric position has already occurred in the second phrase (m. 7, circled), so that the arrival of the actual **mi**-final seems inconclusive yet inevitable. Thematically, this verset is united by transposition of the first-phrase material. Despite the various intervals of transposition, the destinations are all unvaryingly **Do**-centric. In the liturgical Phrygian modes, however, this major-mode tonic also

serves double duty as an authentic repercussio, making it particularly suitable for chants such as *Pange Lingua*, in which the corresponding note is equally emphasized.



Example 4.6. Gigout, *Album grégorien*, Piece No. 96; suspensions and cadences isolated.

Album grégorien, No. 14

Similar to the Phrygian verset above, in No. 14, one of the Lydian versets (Example 4.7), Gigout transposes material to generate tonal variety within a fixed scale. In this verset, however,

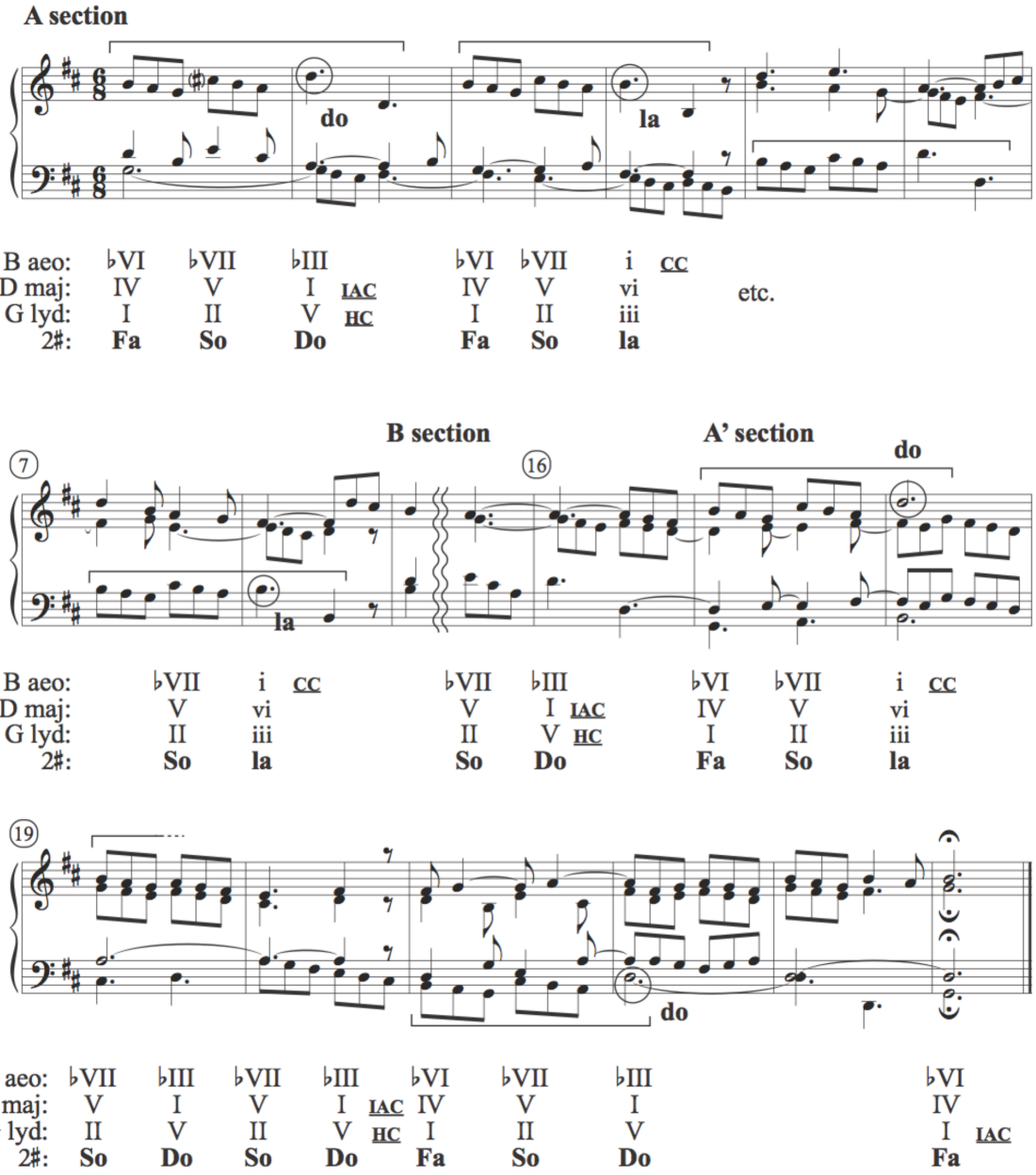
the material transposed is confined to single—yet strategic—harmonies, so that the minimal transpositions are equally effective at switching centric emphasis. This verset is in the 12-mode modes 5 or 6 with **Fa** as the tonic and the common-practice tonics **la** and **do** as the repercussios (Table 4.2). The 12-mode specification means that the verset stays in one diatonic scale only, and b *fa* (what would be C♮) is not used at all. The verset is in simple binary (ABA') form, and I will focus on the A sections in my comments.

Table 4.2. Gigout, *Album grégorien*, Piece No. 14, diatonic positions and their associations.

modes 5 and 6 on G with *b-mi* (C♯) only in 2♯
(12-mode modes 13 and 14)
G-**fa** final
D-**do** authentic repercussio, major-mode tonic
B-**la** plagal repercussio, aeolian tonic

The A sections are characterized by two-bar phrases with parallel material (square brackets in Example 4.7). The first phrase begins with the **Fa**-tonic, but immediately departs to a **Do** chord (m. 2) as a lydian half cadence (I-II-V) or major-mode full cadence (IV-V-I). Then, by transposing only the last note and the last chord up a third from **do** to **la** (circled in Example 4.7), the same melody plays and ends with an aeolian full cadence (♭VI-♭VII-i) or major-mode evaded cadence (IV-V-vi). In comparison to the Phrygian verset above, Gigout's transposition is even more effective in accessing both repercussios.

The returning A' section is characterized by even more unstable **do**, **la**, and **fa** centers, which are emphasized in quick succession and sometimes at the same time. At the return (m. 17), the opening **Fa-**chord is immediately destabilized by the B section's ending (mm. 15–16), in which the **So**-**Do** progression could be a lydian half cadence or major-mode full cadence (much like the opening).



Example 4.7. Gigout, *Album grégorien*, Piece No. 14.

In the A' section, transpositions after the opening **Fa**-chord are more playful and subtle than transpositions were in the original A section. At the first phrase's cadence (m. 18), the melody stays on **do**, but Gigout transposes the harmony to **la** earlier than expected. In the following phrase, Gigout integrates the **la** bass (m. 18) into a bass line that continues linearly to

So-Do progressions (mm. 19–20). The melody's last entrance concludes on **Do** as a potential tonic in the bass (mm. 21–22), making the cadence on **Fa** just as "impossible" as the cadence in Beethoven's *Heilinger Dankgesang* (Chapter 3). Compared to the *Dankgesang*, however, Gigout's modest verset packs a punch in terms of centric variety, chant-theoretical associations, and the minimal transpositions carried out to access these tone centers in the first place.

Guilmant's *Grand chœur*

This chapter opened with two short, single-phrase versets from Guilmant's modal collection *Soixante interludes dans la tonalité grégorienne*. Guilmant also penned one of the longer pieces in Gregorian tonality: the *Grand chœur en forme des marche dans la tonalité grégorienne* (Example 4.8), which is in compound ternary (march and trio) form (Table 4.3) and 50 bars long. The *Grand chœur* shows Guilmant's strategic distribution of scales and tone centers in a more extensive musical setting. The piece both *b mi* and *b fa*, which is as chromatic as the gamut can get. Complemented by different organ stops, Guilmant uses the two forms of *b* to contrast the march and trio sections. The *Grand chœur*'s mode is not explicitly stated, but the piece is in modes 1 and/or 2 in the 8-mode system, and modes 1, 2, 9, and/or 10 in the 12-mode system. The march is largely in D dorian (0♮), and the trio in F major (1♭), followed by subsequent tonicizations of the dominants, A aeolian and C major, in the middle sections of both march and trio sections (Table 4.3). Aside from C major, the tonicized chords also have associations with repercussion chords (Table 4.4): A is the mode-1 repercussio and F is the mode-2 repercussio. After a discussion of thematic material, I will consider how the two scales enrich the complex transpositional and chant-theoretical associations already seen in Gigout's single-scale versets.

	March			FINE	Trio		D.C.
section	**A**		**B**		**C**	**D**	**C'**
measure	1		20		28	36	44
b mi / b fa	*b mi*		*b mi*	*b fa*	*b fa*	*b mi*	*b fa*
tonicized modes	D dor	A aeo	D dor	D aeo	F maj	C maj	F maj
key relation	i	v	i		♭III	V/♭III	♭III

Table 4.3. Guilmant, *Grand chœur*, formal organization.

Table 4.4. Guilmant, *Grand chœur*, diatonic positions and their associations.

modes 1 and 2 on D in 0♮ and 1♭
- with *b-mi* (B♮) in 0♮ (12-mode modes 1 and 2)
  - D-**re** = final
  - C-**do** = major-mode tonic
  - A-**la** = authentic repercussio, aeolian tonic
  - F-**fa** = plagal repercussio
- with *b-fa* B♭ in 1♭ (12-mode modes 9 and 10)
  - D-**la** = final, aeolian tonic
  - A-**mi** = authentic repercussio
  - F-**do** = plagal repercussio, major-mode tonic

Guilmant's extensive output of music in common-practice tonality allows us to compare the Gregorian *Grand chœur en forme des marche dans la tonalité grégorienne* with a more "normative," common-practice *Grand chœur en forme de marche*, Op. 84 (1898), which is not in Gregorian tonality but in G minor. Example 4.9 show the opening phrases and the ending cadences of the Gregorian *Grand chœur*'s march and trio sections and the G minor *Grand chœur*'s opening.

The opening of the two *Grands chœurs* share similar gestures. In both marches, Guilmant favours a loose collection of recurring rhythmic motives: a long opening chord, a pair of short quarter notes, a pair of separated half notes, and falling eighth notes (Example 4.9b and Example 4.9c). The Gregorian *Grand chœur*, however, has an unmistakably modal opening, in which ♭$\hat{7}$

immediately brings to mind Fétis and La Fage's comments and examples on the prohibition of the raised leading tone.

The use of ♭$\hat{7}$ is not limited to the melody, but pervasive in the piece's use of centric mobility. This can be seen at the march and trio's openings. Instead of the half cadence in the G-minor *Grand chœur*, the opening of the Gregorian *Grand chœur* moves from D-**re** to a stable C-**Do** progression immediately (m. 4), which destabilizes the global tonic quite early on. Although the collection remains put, the C-major tonicization is evident from the complete I-IV-V-I progression. Similarly, the Gregorian trio begins in F-**Do**, but Guilmant quickly disrupts the sense of major tonality by ending the phrase on **mi** (m. 31), which could be heard as a "genuine" Gregorian-Phrygian half cadence.

All of these key areas are framed by structural endings that recall the striking $\hat{1}$-♭$\hat{7}$-$\hat{1}$ opening melody in rhythmic augmentation. Example 4.9 labels three of these $\hat{1}$-♭$\hat{7}$-$\hat{1}$ endings. At the end of the march (Example 4.9a), which is also the end of the piece, $\hat{1}$-♭$\hat{7}$-$\hat{1}$ repeats at half-note value in 1♭ so that the diatonic positions rotate from **re-do-re** to **la-so-la**. At the trio's first-phrase cadence (Example 4.9b), the half-note cadential melody rotates the motive to **mi-re-mi** as either $\hat{3}$-$\hat{2}$-$\hat{3}$ in F major, or a local $\hat{1}$-♭$\hat{7}$-$\hat{1}$ in A phrygian. At the end of the trio (Example 4.9b), the rotation to **do-ti-do** inflects the scale degrees to $\hat{1}$-♮$\hat{7}$-$\hat{1}$.

For five reasons, the most significant transposition within the march is that of the structural ending at mm. 24–27 (square brackets in Example 4.8). First, the transposition anticipates the trio's B♭**.** The march's A section closes with a grandiose **la-so-la** cadence on A in 0♮ (m. 19); then, a chromatic transposition of the cadence down a fifth to 1♭ (bracketed in Example 4.8) introduces the B♭ in m. 24. The only changes to this transposition are a

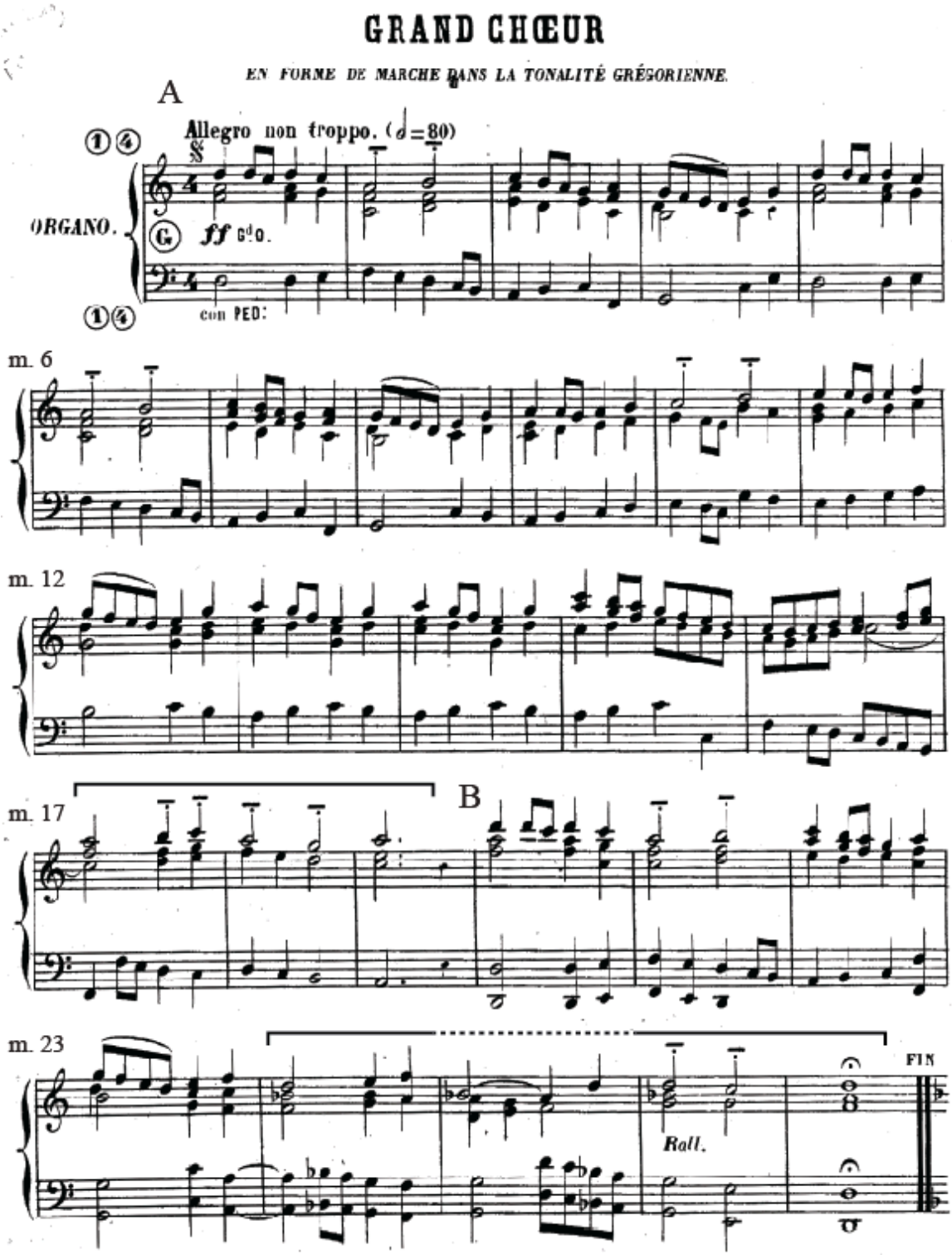
syncopation in the bass (m. 24) to highlight B♭'s entrance and an additional measure in m. 25 to obfuscate the transposition (dashed line in Example 4.8).

Second, the transposition also demonstrates two of Niedermeyer's rules in clear ways. Since the gamut is restricted to two closely-related scales (rule of scalar constraint), the only real transpositions possible in Gregorian tonality are those by fifths. The use of ♭VII^6 as a pre-tonic chord also follows Niedermeyer's cadential rule for Dorian modes.

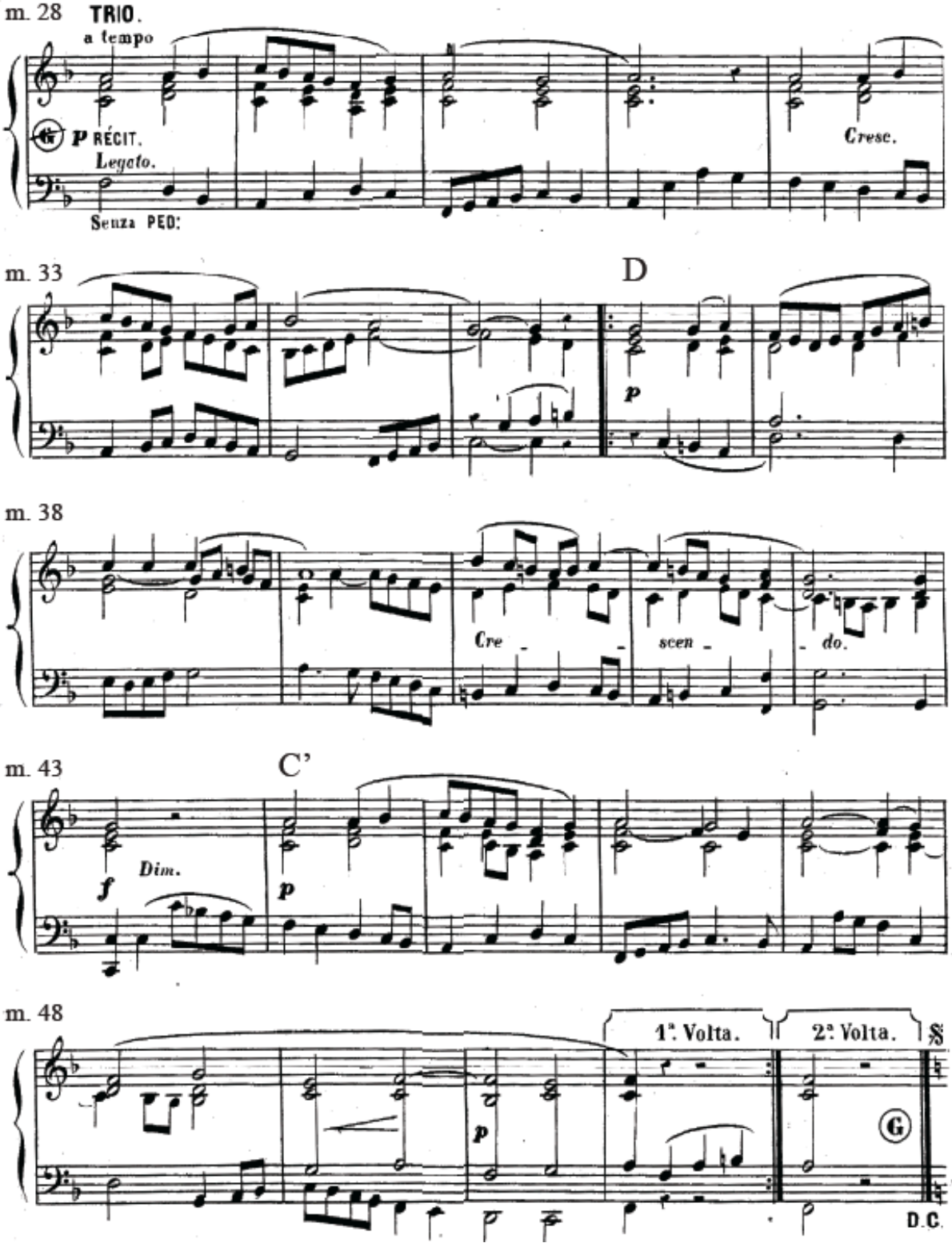
Third, the structural cadence is also the very first cadence on the global final D. Before that cadence, D minor chords only appear as the opening chord of a phrase, each time being swiftly redirected to the key of C major or A aeolian.

Fourth, the use of ♭VII as a pre-tonic cadential harmony creates an unexpected formal-cadential symmetry. As Example 4.9 shows, the march and trio's cadences share the same cadential pre-tonic chord (C-**Do** as ♭VII and V, respectively), albeit under different chordal inversions. In this *Grand chœur*, a C chord could resolve to D minor, F major, or even A minor chords.

And fifth, as discussed above, the **la-so-la** cadence in 0♮ and 1♭ recalls the opening melody in rhythmic augmentation and in different rotation of diatonic positions. The piece finishes as it started: with the ♭$\hat{7}$ that was so central to the chant revival. Guilmant's *Grand chœur dans la tonalité grégorienne* shows a variety of compositional techniques that are possible for maintaining musical interest within the restrictive boundaries of the two-scale gamut. Underneath the global Dorian mode, Guilmant explores the gamut's two diatonic scales and connects them by similar cadences that follow Niedermeyer's rules.

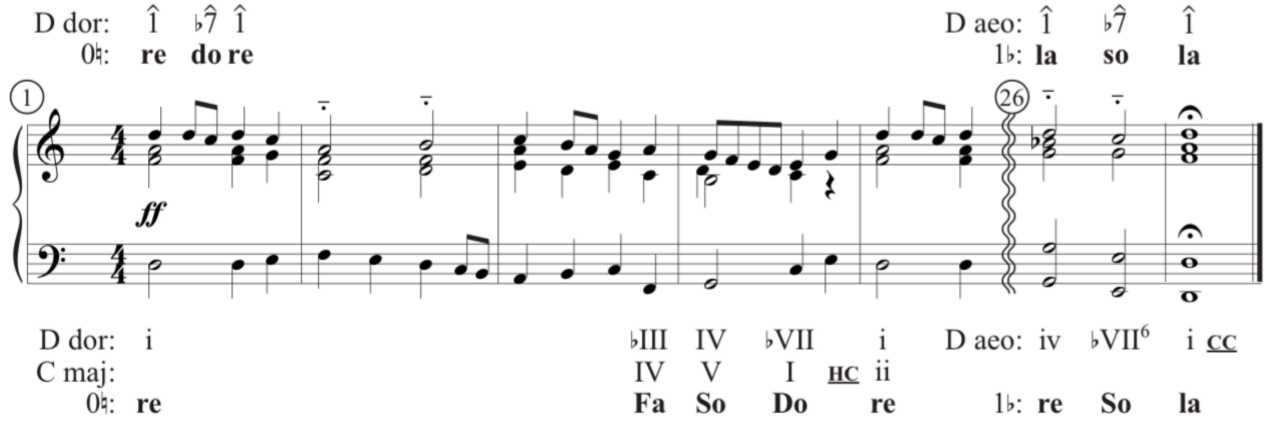


Example 4.8. Guilmant, *Grand chœur en forme des marche dans la tonalité grégorienne*, Op. 54, No. 2.

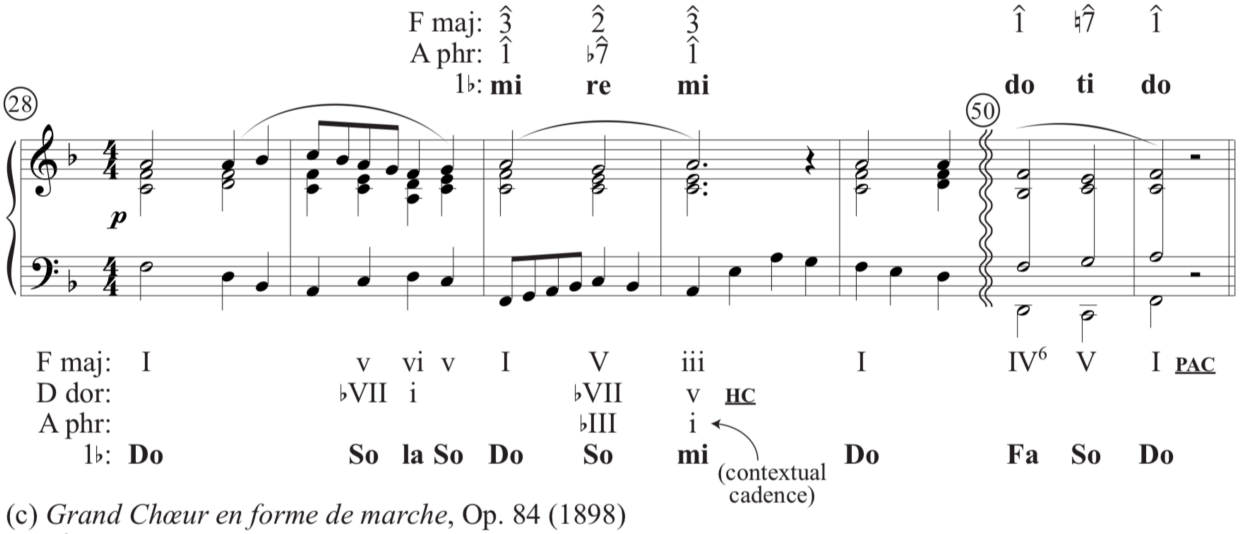


Example 4.8, continued.

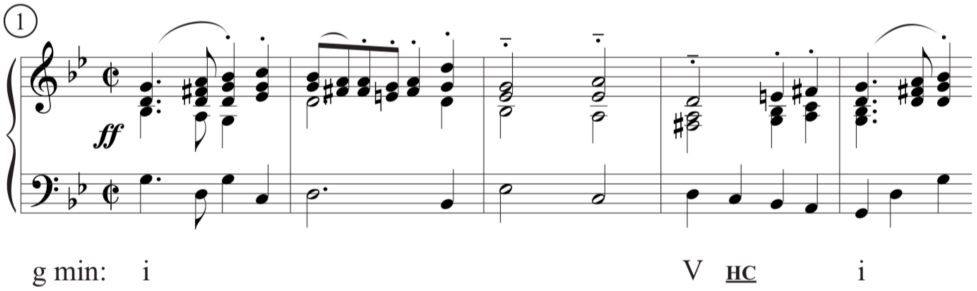
(a) *Grand Chœur en forme de marche dans la tonalité grégorienne*, Op. 54 No. 2 (1878)
opening and ending of the march section



(b) opening and ending of the trio section



(c) *Grand Chœur en forme de marche*, Op. 84 (1898)
opening



Example 4.9. Guilmant, *Grand chœur en forme des marche dans la tonalité grégorienne,* Op. 54, No. 2 and *Grand chœur en forme des marche*, Op. 84.

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In this chapter, I explored the history behind Gregorian tonality and its prescriptive nature, and the musical innovations that these stringent limitations paradoxically generated. At each stage in the development of Gregorian tonality, simple rules created unintended consequences when they were adapted for more complex situations and applications. Theorists involved abhorred common-practice influences on liturgical music. In monophonic chant, banning the raised leading tone meant that cadences were no longer marked by leading tones. The same rule adopted in chant accompaniment led to cadences that were only defined contextually by phrase grouping, not by *ficta* or any type of conventional resolution. Then, as organist-composers adopted similar rules in free composition, they found new strategies and procedures for maintaining musical interest in longer musical contexts. In a vein similar to Reicha's fugue (Chapter 2), thematic transpositions not only helped to create a sense of musical unity, they also tonicized local tone centers and emphasized repercussio chords at the same time. In other words, although the gamut in this music consisted of two scales, it also contained repercussion chords and many more tone centers to create variety and interest within a restrictive gamut.

Gregorian tonality was the exception rather than the rule at the turn of century—most freely composed music at the time contained some kind of chromaticism. Yet, it had a lasting influence in Parisian musical circles. This includes the generations of organists that followed Guilmant and Gigout, through Messiaen, Tournemire, Duruflé. Even composers with less of an output for organ such as Liszt, Fauré, and Satie also studied the theory. Up till today, where Gregorian chant is sung and an organ harmonization preferred, the rules for chant accompaniment can be traced to Niedermeyer's theory. This chapter establishes the theoretical

and analytical foundation for future research in the reach and influence of chant accompaniment and Gregorian tonality on the chant accompaniment theories and liturgical music in the twentieth and twenty-first century.

Chapter 5: English Folk Song

During the first English folk-song revival at the turn of the twentieth century, folk song was preserved and disseminated as a national treasure. Not unlike the French chant revival of the nineteenth century (Chapter 4), diatonic-modal accompaniment of folk song inspired original musical works with melodic and harmonic patterns similar to those in accompanied folk songs (Figure 5.1 is a graphic comparison of these two revivals.) This chapter examines how important relative modality is in English folk song and the national musical style it inspired.

Figure 5.1. Comparison of French chant revival and English folk-song revival.

The English folk-song revival was spearheaded by scholars and collectors such as Francis James Child, Lucy Broadwood, and Anne Gilchrist in the mid-nineteenth century. Cecil Sharp's publications in the early twentieth century were the most directly influential on contemporaneous musicians. Sharp's first folk-song collection *Folk Songs from Somerset* (1904–1909) contained more than a hundred tunes with diatonic-modal accompaniments (composed by Sharp), and he expounded on the philosophy and theory of folk song in his treatise *English Folk Songs: Some*

Conclusions (1907) (*EFS* hereafter).[61] *EFS* became accepted doctrine in the decades that followed, and it remained the most comprehensive treatise on English folk song for half a century (Howes, n.d.; Powers, n.d.). Sharp's modal theory and guidelines in *EFS* are particularly relevant with regard to modal identification and harmonization, as I will discuss later.

Following Sharp's works, English folk song—and in turn, diatonic modes—became a quintessential part of pre-war nationalism and the new English art-music Renaissance known as the English pastoral school (Frogley 1996, 5; Saylor 2017). The incorporation of folk song into a musical national identity mirrored the pioneering scholarly work and compositions by Béla Bartók and Zoltán Kodály in Hungary (Karpeles 1967, 67). English composers such as Ralph Vaughan Williams, Gustav Holst, George Butterworth, and Australian Percy Grainger participated in folk-song transcription, arrangement, and folk-song inspired compositions. Holst's First Suite for Military Band, discussed in Chapter 1, is one such original composition influenced by folk song; by comparison, his Second Suite for Military Band consists entirely of folk-song arrangements. Vaughan Williams's rationale for using folk song in composition is a fitting summary of the success of the revival:

> "1. Folk songs contained the nucleus of all further development in music;
> 2. They invariably affected the style of great composers;
> 3. National music was a sure index to national temperament;
> 4. Folk songs were supremely beautiful" (Vaughan Williams 1903, quoted in Kennedy 1964, 34).

In this chapter, I will examine the implications that relative modality has for understanding English folk song, diatonic-modal harmonizations of folk song, and later works inspired by folk song, specifically through the lens of Sharp's and Vaughan Williams's works in the 1900's.

[61] For a historical overview of Sharp's *Folk Songs from Somerset*, see Karpeles 1967 (46–57) and *EFS* (58–67).

***

Mode in English Folk Song

Despite folk song having no historical or practical origin in linking psalm tones and antiphons, Sharp borrows the Greek ethnic names from chant theory for his folk-song theory. A folk song's tonic is determined by the final note (*EFS*, 39, 56), and just like Niedermeyer's theory, the arranger should "confine himself … exclusively to the notes of the mode" (*EFS*, 48).[62] This rule would be repeated by many, including Vaughan Williams, who prescribes that "when accompanying modal tunes, […] chords should be strictly in the mode" (Vaughan Williams and Lloyd [1959] 2003, xi).

Sharp's brand of folk-song modal theory reached its zenith in Bertrand Bronson's "mode star" (1946), which captures the overlapping scale-degree content between pentatonic and hexatonic subsets of the diatonic scale (Figure 5.2). The mode star was adopted from Gilchrist (1911) and later used by Sharp to categorize Appalachian folk songs in his last folk-song collection (Campell and Sharp 1917). However, soon after Sharp's introduction of folk-song modes, many found his theory problematic, and this sort of mode-based classification scheme eventually fell out of fashion in the mid-twentieth century (Keller 1984, 101–102; Bohlman 1988, 39; Powers et. al., n.d.).

[62] Closing modes forms the basis of Sharp's rough statistics: the majority of folk songs are in the major mode, followed by the mixolydian, dorian, and aeolian modes. Folk songs in the lydian and phrygian modes are considerably rarer (*EFS*, 54–55).

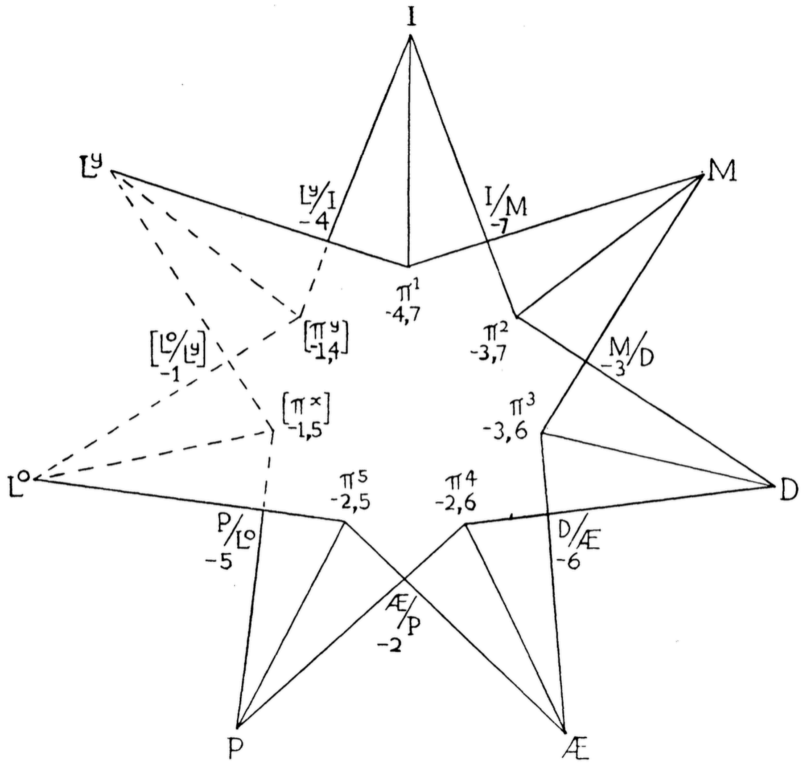


Figure 5.2. Bronson, mode star (1946, 44); Latin letters stand in for diatonic modes, Arabic numerals are scale degrees with inflections, π^1 to π^5 stands for the five pentatonic modes.

One of Sharp's harshest critics was Norman Cazden. He acknowledges Sharp's pioneering efforts, writing that the adoption of Glarean's six principal modes "achieved a liberating step forward from the rigidities of the schoolbook precepts of his time," showing that not all music is in the major or minor mode (1971, 46). However, Cazden was unhappy with the dogmatic status of *EFS* and the lack of progress made since Sharp's work, writing that it had "outlived its initial inspirational stage" (1971, 46). He maintained that the church modes have too much historical and theoretical baggage, and that they have little value other than their scholastic and archaic connotations, serving only as "pretentious technical jargon" (1971, 46). Furthermore, Cazden argued that the final and diatonic genus is but one of many classifying features, and the the dominance of Sharp's theory obscures more important aspects of folk song classification.

Beyond specifics of mode identification, a more general criticism of Sharp is that he exploited folk singers and that he heavily distorted and romanticized folk song. This line of argument is made obvious in the book titles *Imagined Village* (Boyes 1993) and *Fakesong* (Harker 1985), the authors of which criticize Sharp from cultural studies and Marxist viewpoints, respectively. The debate about whether Sharp is "a folk hero or a villain" remains relevant today for modern folk musicians and audiences **(**Irwin, 2011). A pair of articles by Bearman (2000; 2002) provide a good counterargument that Sharp accurately portrayed folk singers and folk songs, and that he did so to preserve and celebrate folk song as an English national treasure.

After modal theory fell out of fashion in folk-song research, music-theoretical treatments of folk songs focused on topics such as melodic patterns, tune families, similarity, and geography (Nettl 2005, 114–17; Keller 1984). Digital folk-song databases and computer-aided research have enabled big-data research in the field of computational ethnomusicology (van Kranenberg et. al., 2010). Regardless, what remains a positive legacy of Sharp's modal theory is its role in establishing an incipient understanding of folk songs, giving folk song immediate intellectual stature, and its central role in shaping Vaughan William's (and other composers') creative output (Cazden 1971, 46). In other words, however controversial Sharp's work was, his modal theory remains on center stage in this chapter because of the symbiotic relationship between folk-song classification and contemporaneous English composition. The new folk-song arrangements of the day froze folk songs in time as perceived by metropolitan scholars and composers, not as practiced by rural folk singers.

In *The Study of Folk Song*, Philip Bohlman describes the folk-song-inspired composer as a special kind of classifier:

> "Although many of the classificatory concepts devised by folk music scholarship are primarily concerned with the interrelations of various folk music repertories, the urge to

> understand through classification has also guided much of the thinking about the ways in which folk music interacts with other genres, especially with "composed" art music. I emphasize the action of composing art music because *this action identifies a significant aspect of this type of classification, whose end result is usually less a matter of inventory or schematic representation than of use; it is thus a restating of perceived meaning in folk music within a new musical context.* […] The composer often bases his or her use of folk music in an art music context on classificatory decisions, and it is not uncommon to find the composer engaged in other aspects of classification in relation to or in preparation for the resituating of folk music in the art music context. Bartók and Vaughan Williams are but two of the twentieth-century composers whose collection and investigation of folk music were inseparable from their creative philosophy" (Bohlman 1988, 46–47; emphasis mine).

In other words, if folk songs—as perceived by composers—demonstrate properties of diatonic modes and relative modality, then folk-song arrangements and folk-song-inspired music may inherit these properties.To illustrate, I will examine Cecil Sharp's perspective on harmonizing and arranging with regard to the English folk song "Sweet Kitty," Vaughan William's arrangement of "She Stole Some of Her Father's Gold," and a folk-song inspired cadence that appears in a large number of Vaughan Williams's original compositions.

Cecil Sharp's Harmonization of "Sweet Kitty"

Sharp's harmonization philosophy could be traced to late nineteenth-century ethnomusicologist Bourgault-Ducoudray, whose instruction in harmonizing Greek and Eastern folk songs is directly quoted in *EFS*:

> "We have made it a rule never to alter the melody for the sake of the harmony; on the contrary we have made the harmony to the melody, and have forced ourselves to preserve in accompaniment the character of the mode in which the melody is cast. […] In the work of harmonization we have not banned the use of any harmonic combination. The only harmonies that we have proscribed are those which seemed to conflict with the modal impression created by the melody that was to be harmonized. We have directed our efforts to enlarge the circle of the modalities of polyphonic music, and not to restrict the resources of modern harmony. We have declined to be bound by the rules of a past age in an attempt which is new; if it is to find imitators the future must prove" (Bourgault-Ducoudray 1876, 8; translated in *EFS*, 52).

To summarize, by preserving the mode of the folk song in harmonization, Bourgault-Ducoudray was able to expand the Western harmonic vocabulary beyond the major/minor modes, as Reicha and others did separately. Bourgault-Ducoudray's declaration at the *Exposition universelle international* (Paris, 1878) summarizes his viewpoint on composition:

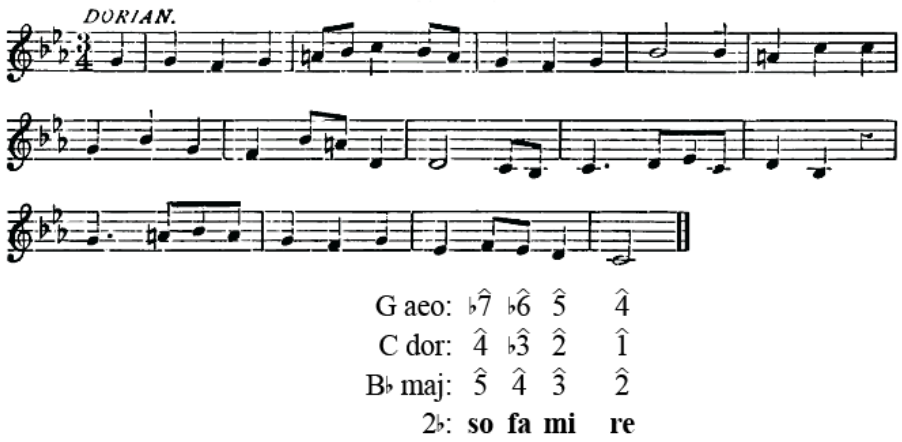
> "All modes, old or new, European or exotic, insofar as they are capable of serving an expressive purpose, must be admitted by us and used by composers. […] Our two modes, the major and the minor, have been so thoroughly exploited that we should welcome all elements of expression by which the musical idiom may be rejuvenated" (Bourgault-Ducoudray 1879, translated in Brody & Smith, n.d.).

Under Bourgault-Ducoudray's philosophy of harmonization, Sharp makes more pointed comments in *EFS* on harmonizing folk songs with major/minor modes. He describes how the modern musician

> "is so saturated in the harmonic effects which are peculiar to the major and minor system, that they dominate his thoughts and colour everything he writes. Every passage of music that comes his way he refers, as of instinct, to the modern tonality" (*EFS*, 47). Mirroring Bourgault-Ducoudray's proclamation, Sharp concludes that the modern musician would "realize that the modes really offered a new channel of musical expression, and an escape from the present restricted tonality" (*EFS*, 47).

In *EFS*, Sharp reproduces Beethoven's *Heiliger Dankgesang* as an example of "genuine" harmonic modality (*EFS*, 48–53). As discussed in Chapter 3, however, Beethoven's modality is noted for centric ambiguity between F lydian and C major. Citing the folk song "Sweet Kitty" (Roud number 1349) in *EFS* (Sharp 1905, 48) (Example 5.1), Sharp notes that what he calls "tonal ambiguity" is not uncommon in folk song.[63] In light of the supposedly global "dorian" designation, Sharp is surprisingly unconcerned about the inconclusive final.

[63] In the version of "Sweet Kitty" in Example 5.1 (text shown later in Example 5.2), the lyrics describe a man meeting a young woman on the highway, but her identity and background remains a mystery to the man. In other versions (Sharp 1959, 201), the woman is a prostitute who steals from the man.

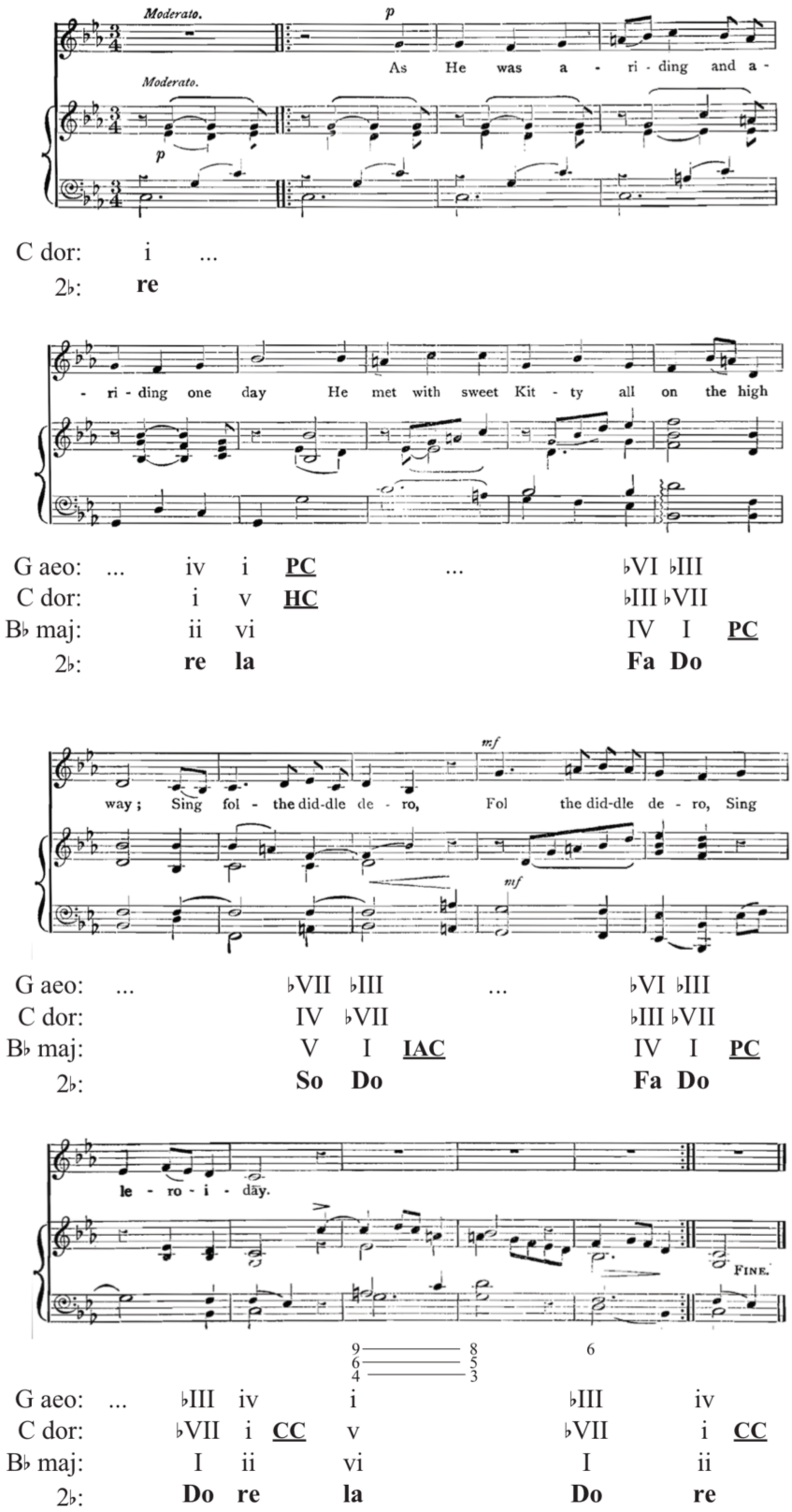


Example 5.1. "Sweet Kitty," first version cited in *EFS* (bottom annotations mine).

As Sharp writes:

> "It must be confessed that the conclusion of this tune *comes upon the ear as a surprise.* G would seem to have been the natural note to end with; for the tune begins with that note, and all the cadences fall upon one or other of the notes of the chord of G minor. As the tune stands it leaves behind it *a sense of vagueness and lack of completion.* Many folk-tunes are like "Sweet Kitty" in this respect, and I can only assume that either folk-singers like this effect, or at least, do not object to it. For my own part, I do not find that tunes of this kind repel me, although, when I first heard them, *they struck me as very curious and unusual*" (*EFS*, 60; emphasis mine).

Sharp highlights G-**la** as another tonic that is in conflict with the labeled mode C-**re** (according to the final). To common-practice ears, both G-**la** and B♭-**do** can be potential tonics because of major/minor influence and the strong assertion of both notes in the tune. (Sharp's accompaniment would reinforce all three tonics.) For example, the concluding descending tetrachord **so**-**fa**-**mi**-**re** ought to be heard as $\hat{4}$-$\flat\hat{3}$-$\hat{2}$-$\hat{1}$ according to the labeled dorian mode (Example 5.1). Yet, many would hear it as an inconclusive $\flat\hat{7}$-$\flat\hat{6}$-$\hat{5}$-$\hat{4}$ or even $\hat{5}$-$\hat{4}$-$\hat{3}$-$\hat{2}$. This kind of centric ambiguity and center-final incongruity are features that Sharp deems noteworthy but nonetheless typical of folk song.



Example 5.2. Sharp, "Sweet Kitty" from *Folk Song from Somerset.*

Although Sharp never discussed the technical details of harmonizing centrically ambiguous folk songs, his harmonization of "Sweet Kitty" is faithful to his own description of the folk song. His harmony accurately reflects the comfortable coexistence of a global dorian mode and other tonics within. From the outset, Sharp acknowledges the dorian final as global tonic by opening and closing the folk song with **re** chords. A coda also reaffirms the **re** enclosure. Yet, the dorian tonic makes no other appearances. Between the enclosing dorian tonics, **la** and **Do** assert their own centricities, so when the closing **re** chord reappears, the harmonized folk song ends just as inconclusively as the unaccompanied version. Sharp's four-bar piano coda fittingly epitomizes the folk song's centric ambiguity and inconclusive final. The chord progression **la-Do-re** cycles through each tone center, and, like the folk song, the dorian coda still "comes upon the ear as a surprise;" and strikes the ear as "very curious and unusual," in Sharp's words above.

At the time, Sharp's radical harmony was perceived as contradictory to conventional teachings. Vaughan Williams writes: "It is true that Sharp had little of the conventional technique of pianoforte accompaniment, as taught by professors of composition, but he developed a technique of his own whose complete success was only hindered, I think, by his fear of the harmony professor" (Vaughan Williams 2008, 233).[64] Sharp's arrangement was pragmatic in nature, created primarily to disseminate folk song, but other composers found the diatonic-modal harmony refreshing and used relative modality to creative ends. I have discussed one such example in Chapter 1. In Holst's First Suite, the original music closely mimics Sharp's folk song harmonization, and relative modality is essential to thematic unity.

[64] See also A. H. Fox Strangeway's comments on Sharp's accompaniment in Karpeles 1967, 214.

Below, I will examine two ways that Vaughan Williams creatively engages with relative modality in folk-song inspired settings. First, I will look at one of his more creative mixolydian folk-song arrangements. Then, I will return to the dorian mode and examine a folk-song inspired cadence in Vaughan Williams's early works identified primarily by diatonic positions rather than scale degrees.

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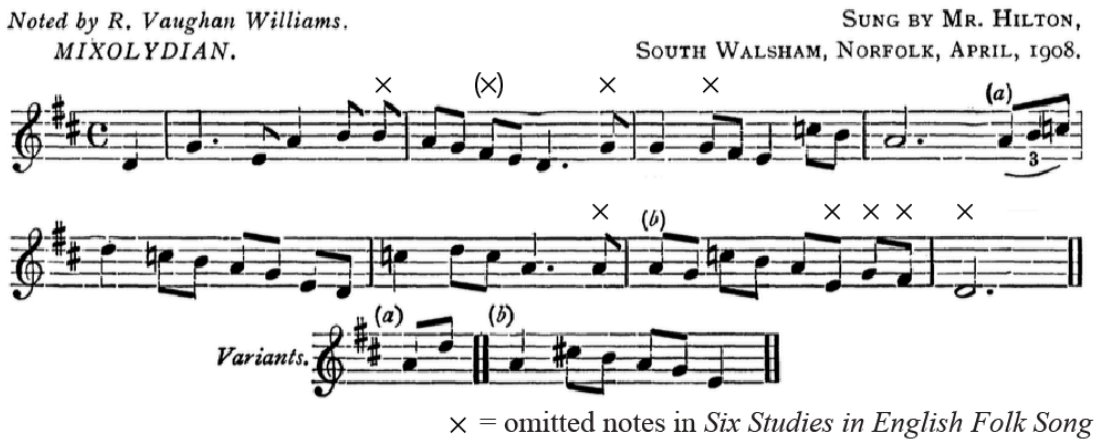
Vaughan Williams's *Six Studies in English Folk Song*, mvt. IV.

Vaughan Williams recalls being "thoroughly obsessed by the folk song" in his student years, once stating that he "went berserk on the flat seventh and the sharp sixth and the Mixolydian cadence" (Vaughan Williams 2008, 252–53).[65] In this section, I will examine one artistic fruit of his modal obsessions: an arrangement of the mixolydian folk song "She Borrowed Some of Her Father's Gold" (Child 4, Roud 21), which Vaughan Williams himself collected (Example 5.3).[66] I will show how he builds upon the foundations of Sharp's accompanying style, how he deviates artistically from it, and how he amplifies the role relative modality plays in his arrangement.

[65] See Onderdonk 2013 for an overview of Vaughan Williams's folk song arrangements.
[66] The ballad tells a story about a water spirit disguised as a knight, who marries a girl intending to take her back to his aquatic lair (Vaughan Williams and Lloyd [1959] 2003, 105–06). The title song "She Borrowed Some of Her Father's Gold" refers to the girl preparing goods for the journey ahead.



Example 5.3. Vaughan Williams (1910, 123), transcription of "She Borrowed Some of Her Father's Gold" (annotations mine).

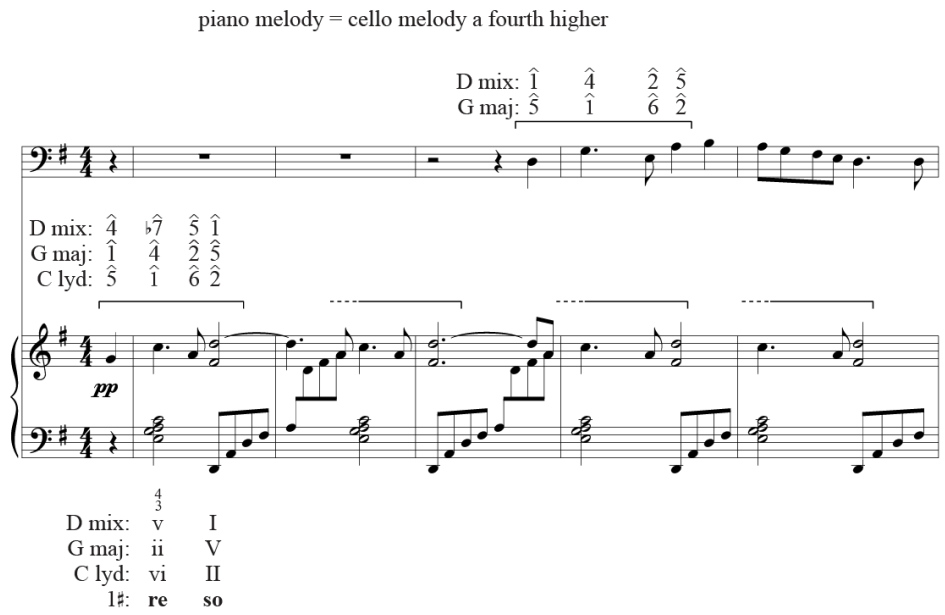
The folk song Vaughan Williams transcribed has two variants: one with C♮-♭$\hat{7}$ and one with C♯-♮$\hat{7}$ (Example 5.3), the latter of which brings the folk song temporarily into the major mode. In the fourth movement of *Six Studies in English Folk Song* (1926) for cello and piano (under the title "She Borrowed Some of Her *Mother*'s Gold"), Vaughan Williams does not employ any of the variants shown in Example 5.3, confining the entire folk melody to the 1♯ scale. Furthermore, he omits the folk song's ending, which would have confirmed the closing mode, at the very least. (Vaughan Williams's omissions are marked with crosses in Example 5.3.) (The folk-song endings are replaced with a spun out motive that I will discuss later.) Vaughan Williams's arrangement contains two verses of the folk songs and an introduction. The folk song is played by the cello in the first verse and the piano in the second verse. I will discuss each section in turn.

Introduction (mm. 1–3) and First Verse (mm. 4–12)

Before examining Vaughan Williams's arrangement, it may be observed that relative modality already plays a significant role in the unaccompanied folk song. Although the melody is enclosed by **so**, the opening ascending fourth **so-do** may sound like a typical $\hat{5}$-$\hat{1}$ (Vos 1999). Therefore, one could hear the 1♯ folk song in both mixolydian and major modes.

In general, the introduction and the first verse is marked by a constrained harmonic and textural vocabulary (Example 5.4). At first, Vaughan Williams's piano part stays entirely within 1♯. To cement the ascribed mixolydian mode, Vaughan Williams opens his folk-song setting with an oscillation on **re**^{7} and **So** chords. Each chord receives its unique piano figuration: the **So** chord is always in root position, arpeggiated, and lowest in register; the **re**^{7} chord is either in root or second inversion and played as a block chord. Being the sole pair of dissonant and consonant chords, the oscillation is as mixolydian as it could be (**re**^{7}-**So** as v^7-I). Nevertheless, G major may still be heard as an absent tonic (**re**^{7}-**So** as ii^7–V).[67]

[67] The first verse's limited harmonic and textural vocabulary is also juxtaposed with shifts in metrical identity. The introduction is grouped in 3/2 instead of 4/4 via an elongated tonic arpeggio. When the melody enters in mm. 4–5, the v^{43}-i accompaniment snaps back into 4/4. After an entire v^{43} spanning m. 6, tonics and dominants switch metric positions, with the mixolydian tonic on the strong beat.



Example 5.4. Vaughan Williams, *Six Studies in English Folk Song*, "She Borrowed Some of her Father's Gold."

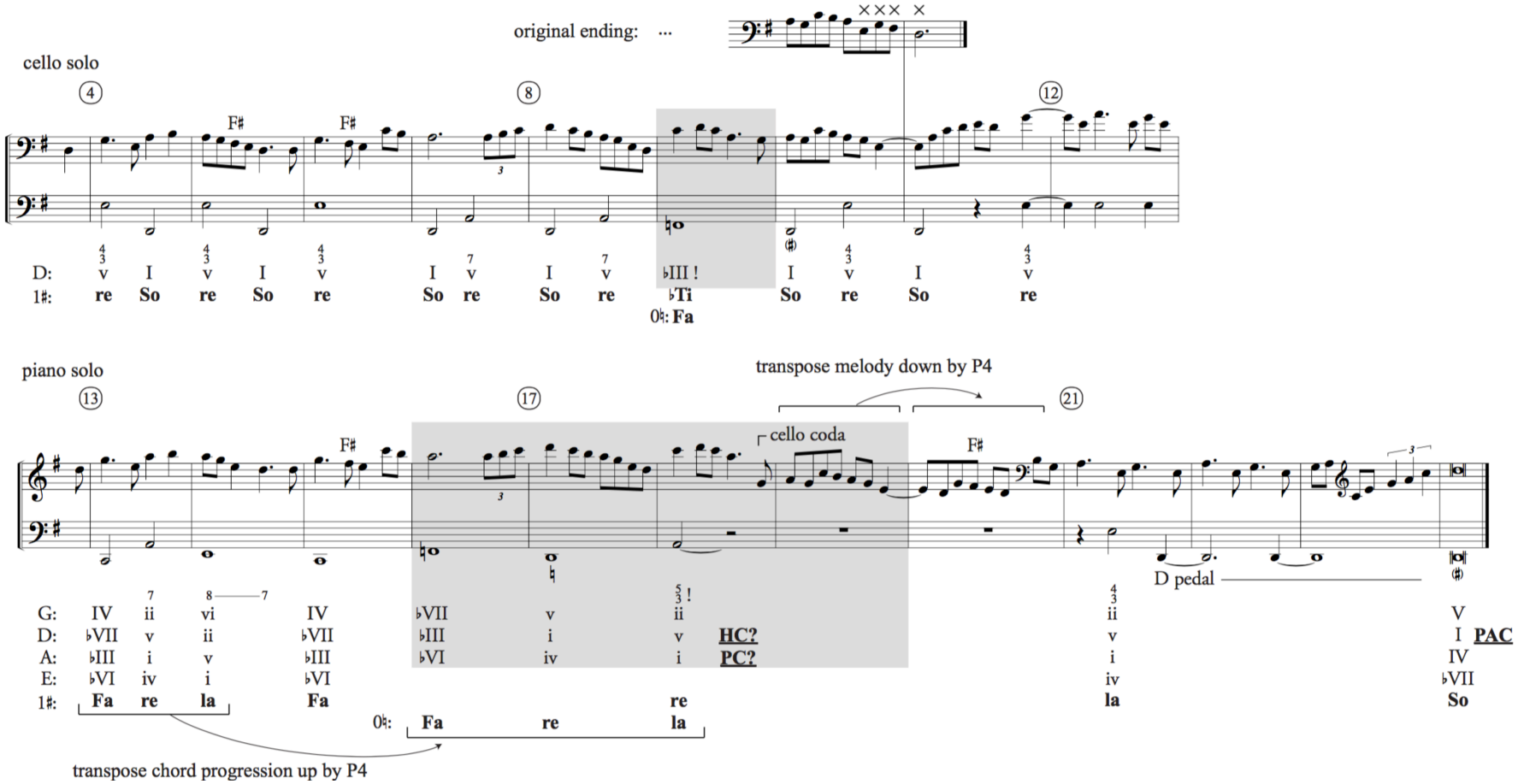
The opening melody in the piano introduction adds an additional layer of complexity that colors the folk song's entrance in the cello. Above the **re**^{7}**-So** oscillation, the folk-song incipit **so-do-la-re** (square brackets in Example 5.4) is transposed by a fourth to **do-fa-re-so**. In the context of the closing mixolydian mode, the transposition ensures that harmony and melody resolve concurrently to the mixolydian tonic. Under Vaughan Williams's melodic transposition, the initial two notes **do-fa** would be $\hat{4}$-$\flat\hat{7}$ in the mixolydian mode, a refreshing figure foreign to common-practice harmony. They could also be heard as $\hat{1}$-$\hat{4}$ in G major or $\hat{5}$-$\hat{1}$ in C lydian. Regardless, as the cello enters with the actual folk song (m. 4 in Example 5.4), the piano continues the transposed incipit in parallel fourths. Therefore, as the cello enters with the centrically ambiguous folk song, the piano amplifies the multiple centers and scale degrees: the

piano and the cello may have same scale degrees in different modes, different scale degrees in the same mode, or different scale degrees in different modes!

In short, the piano's transposed melody creates contrapuntal emphasis on **so**; yet, it does not guarantee the tonic status of **so**. Rather, the transposed melody enriches the already ambiguous folk-song incipit. The transposed melody's continuation into the folk song's entrance (m. 4) adds yet another dimension to the multitude of scale-degree hearings.

♭III (m. 9)

Below, my analytical prose will continually refer to Example 5.5 with supplementary examples and figures. In the first verse's harmony, the only exception to the mixolydian v^7-I oscillation is the sudden chromatic mediant chord (♭III) on F♮ (m. 9), which serves as a dramatic high point. For the sake of scalar variety, Vaughan Williams could have alternated the D-mixolydian (1♯) folk song with the one of the folk-song variants in D major (2♯) (refer to Example 5.3), and the common-practice major mode could stabilize the closing tonic were that a compositional priority. Rather, Vaughan Williams uses the F♮-major chord in both verses to destabilizes the tonic.



Example 5.5. Vaughan Williams, "She Borrowed Some of her Father's Gold," first and second verses (mm. 4–24), melody and bass only.

The chromatic mediant F♮ is a result of an extra flatwise inflection from 1♯ to 0♮, and only under specific modal contexts can chromatic mediants be one single inflection away on the line of fifths. Just as the mixolydian mode can be characterized as the major mode with an extra flat, the move to F♮ can also be considered as the mixolydian mode with an extra flat, or even a doubly flattened major mode with ♭$\hat{7}$ and ♭$\hat{3}$. (Of course, the move to F♮ can also be considered as a temporary move to the parallel dorian mode.) Reframed in terms of folk-song mode's pastoral and bucolic associations, the sudden ♭III arpeggio in a mode already characterized by ♭$\hat{7}$ is analogous to encountering an open view of rolling hills on an already scenic path.

Besides their associative and dramatic potential, chromatic chords in modal contexts have different scalar implications than they do in major/minor modes.[68] In common-practice harmony, an extended shift from I to ♭III entails at least two more flatwise inflections. In modal contexts, however, Vaughan Williams is able to shorten this distance to a *single* flatwise inflection (Figure 5.3). Furthermore, because ♮$\hat{3}$ and ♭$\hat{3}$ is all that separates the mixolydian and dorian modes, it allows a composer to arrive at mixoldian chromatic mediants (♭$\hat{3}$) or dorian Picardy thirds (♮$\hat{3}$) by a single diatonic inflection. Although the F♮-major chord temporarily evokes the 0♮ scale, only in the second verse does Vaughan Williams further explore the dramatic ramifications of this flatwise inflection.[69]

[68] See Krebs 1980 and Kopp 2002 on the use and classification of chromatic mediants in the 18th and 19th century.

[69] A full exploration of chromatic scale degrees in modal contexts is beyond the scope of this dissertation. Chapter 6 contains a related discussion of the chromatic dominant in locrian modulations.

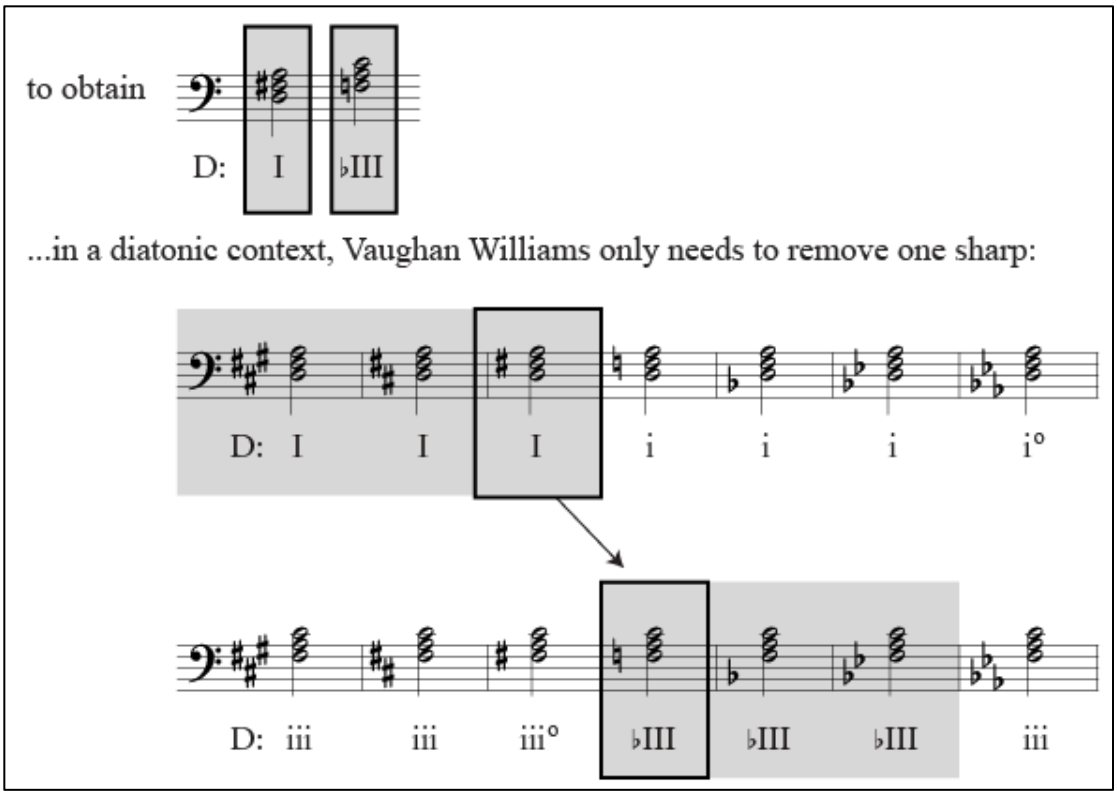


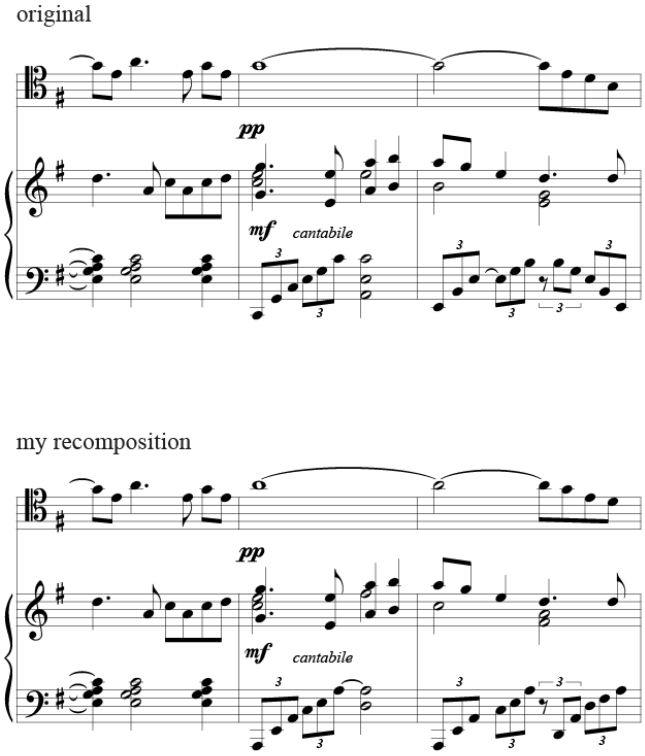
Figure 5.3. Vaughan Williams, "She Borrowed Some of her Father's Gold," scalar implications of ♭III.

The foregoing analysis has shown how Vaughan Williams approaches relative modality in this folk-song arrangement. Although his oscillating harmony contextualizes **So** as the most stable chord, centric ambiguity between mixolydian and major-mode tonics remains. His chromatic mediant and transposed incipit not only add a creative flair to a basic accompaniment, they also further destabilize the closing tonic.

At the end of the first verse, rather than confirming the mixolydian tonic through a cadence, Vaughan Williams omits the folk-song ending and avoids a harmonic cadence altogether. In place of the folk-song ending, he spins out a motive based on the incipit (mm. 11–12) and carries the established modal ambiguity into the second verse.

Second Verse (mm. 13–24)

The second verse departs from the textural and harmonic constraints of the first verse and expands on the single F♮-major chord. The piano now plays the melody and harmonizes it with triplet arpeggios throughout. As my hypothetical recomposition suggests (Example 5.6), it is possible to retain the more dramatic texture and feeling with the **re^7-So** oscillation of the previous verse. However, Vaughan Williams opts for a fresh harmonic progression **Fa-re-la** in the second verse. With the absence of any mixolydian tonic in the first few measures, the common-practice listener quickly gravitates towards the E-aeolian or the absent G-major tonic.



Example 5.6. Vaughan Williams, "She Borrowed Some of her Father's Gold," second verse, opening (mm. 12–14) and my recomposition.

In m. 16 (refer to Example 5.5), a familiar F♮-major chord unexpectedly returns two bars earlier than the first verse. Here, the F♮-major chord goes not to a D-major chord (as it did in the first verse), but to a d-minor chord, avoiding the false relation between F♮ and F♯. The 0♮ scale initially hinted at in the first verse is fully elaborated in the 0♮ chord progression **Fa-re-la** (mm. 16–20), a chromatic transposition of the second verse's opening **Fa-re-la** in 1♯ (m. 13–14). The 0♮ segment quickly leads back to 1♯ over a drawn out structural cadence I examine below.

The Structural Cadence

Using the closing mixolydian tonic as reference, three events unfold over the structural $v^{(7)}$-I cadence: dominant pause, dominant quasi-cadenza, and tonic resolution (Figure 5.4).

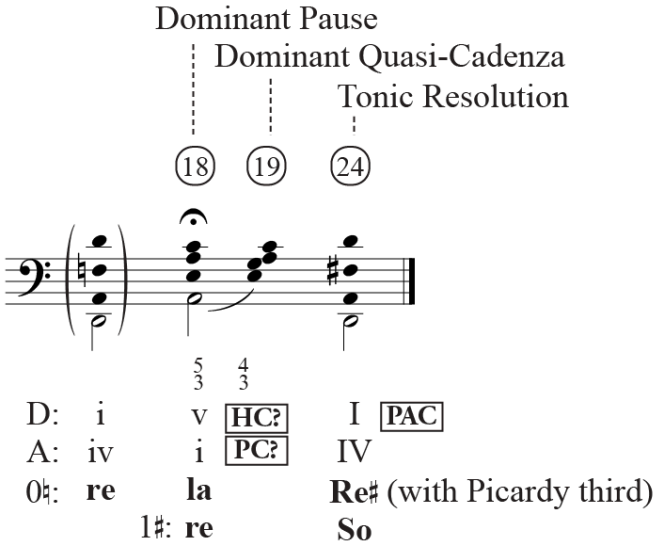


Figure 5.4. Vaughan Williams, "She Borrowed Some of her Father's Gold," structural cadence.

1. Dominant Pause (m. 18). In comparison with the same position in the first verse (m. 9), the second verse's dominant pause (m. 18) is much more stable. First, the dominant pause is

the only consonant root-position A-minor triad in the piece. Previously, all A-minor chords have been seventh chords in root position or second inversion. Second, the A-minor chord is now diatonic position **la** in the scalar context of 0♮ instead of **re** in 1♯. The scalar shift not only changes the mixolydian dominant into a dorian one, but the **la** chord may also sound like a stable aeolian tonic to common-practice ears. Third, there is a textural break in the piano accompaniment.

For the three reasons above, it is possible to interpret the consonant pause as an actual phrase-ending cadence. Both ways of hearing the **re**-**la** progression at the pause (mm. 17–18) fit conventional means of ending a phrase—either as a dorian half cadence (i-v) or as an aeolian plagal cadence (iv-i). Therefore, as the structural dominant of D mixolydian, the A-minor chord in m. 18 has neither a sense of dominant tension nor tonic expectation![70]

2. Dominant Quasi-Cadenza (mm. 19–20). Immediately after the dominant pause, the cello takes over the piano's main melody and plays a quasi-cadenza over the structural dominant. The cadenza material contains a descending fourth chromatic transposition (square brackets in Example 5.5) that shifts the scale from 0♮ to 1♯ right (m. 20) before the very last chord change.

3. Tonic Resolution (mm. 21–24). After the scalar shift, the v^4_3 harmony and the lilting figuration from the opening return in m. 21. The dominant harmony is quickly joined by the tonic pedal point in the piano, and the v^4_3 chord in the upper voices eventually "resolves" into the final mixolydian tonic. However, despite being the closing tonic, there is no D-major chord in the second verse until the this last tonic.

[70] Interestingly, for the same folk-song material, the A-minor pause (m. 18) and the F♮-major (m. 9) are the only two consonant triads that preserve the melody's C and A as chord tones. Both chords are used as a dramatic device at the same point in the phrase: F♮-major as a surprise chromatic mediant, and A-minor as a pausing point.

Moreover, viewing the scalar shift from 0♮ to 1♯ (m. 20) as a temporary inflection further distances the final chord from the folk song's key of D mixolydian. Since the mixolydian tonic is never asserted in the second phrase, it is possible to reframe the D-mixolydian tonic as a D-dorian Picardy third. The single scale-degree change from ♭$\hat{3}$ to ♮$\hat{3}$ is exactly the converse of the temporary mixolydian ♭III (♮$\hat{3}$ to ♭$\hat{3}$) seen earlier. Like the chromatic mediant, the Picardy third situates a classical technique in a new diatonic-modal context.

From the perspective of the closing tonic, the arrangement ends with a PAC in D mixolydian; yet, my analysis has shown that everything leading up to it suggests otherwise. The absence of tonic in the entire phrase, the stability of the structural dominant, and the last-minute change of scale render the final chord unexpected and tonally inconclusive. The resulting experiential richness and associative pathways belie the simple "PAC" label. By pairing inconclusive harmony with slow harmonic rhythm, pedal point, and a heavenly ascent in the cello, Vaughan Williams's cadence is one of the most drawn out, refreshing, and magical of cadences—as structural as it is inconclusive.

In *Six Studies in English Folk Song*, Vaughan Williams elevates Sharp's simplistic accompaniment style into an evocative concert piece. In his arrangement of "She Borrowed Some of Her Father's Gold," the transposition, omission, and scalar inflection of the folk song amplify the relative modality that is already present in the unaccompanied folk song. The opening transposition of the folk-song incipit multiplies the possible scale-degree interpretations, the altered folk-song ending in both verses delays tonic arrival, and the scalar move to 0♮ further subverts the folk song's original scale.

One can only wonder what Vaughan Williams was working on in his student years when he "went berserk on the flat seventh and the sharp sixth and the Mixolydian cadence" (Vaughan

Williams 2008, 253). Regardless, in his mature music, he appropriated the mixolydian cadence and scale in "She Borrowed Some of Her Father's Gold" to great effect. Vaughan Williams's artistic deviations and imaginative accompaniment amplified many elements of relative modality in folk song such as centric ambiguity, inconclusive finals, and common-practice influence—the same elements that Sharp had found so intriguing at the beginning of the century.

***

Vaughan Williams's la-so-mi-re **cadence**

When Vaughan Williams does not use actual folk melodies, he often borrow features extracted from folk song. In common-practice harmony, motives and cadences are often defined by scale degrees. Below, I show a cadence defined by the diatonic positions **la-so-mi-re** rather than scale degrees, since multiple modal centers may be emphasized at the cadence.

Vaughan Williams's early period (1900s) contains the ***la-so-mi-re*** *cadence* (***lsmr*** *cadence* for short).

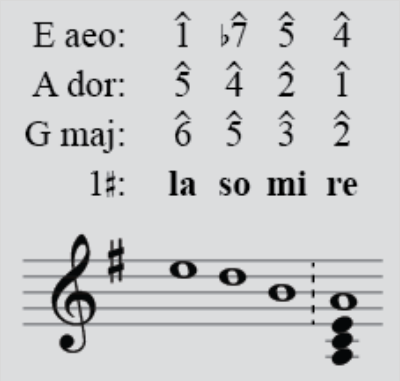


Figure 5.5. Schematic representation of the lsmr **cadence.**

The **lsmr** cadence has the following features:

• descending **la-so-mi-re** melody;

• possible internal expansion (e.g., **la-so-mi-do-re**);

• metrically strong melodic **re** that coincides with the harmonic final; and

• a varied modal context of aeolian, dorian, and/or major modes.

The **lsmr** cadence always appears in a fully diatonic context, and the scalar descent's missing **fa** is always acknowledged elsewhere in the melody or in the accompaniment. Yet, the linear and continuous quality of the melodic descent make it scale-like, such that it resembles parts of gapped (or incomplete) diatonic scales like the pentatonic **do-la-so-mi-re** and hexachordal **do-ti-la-so-mi-re**.

On a stylistic level, Vaughan Williams's **lsmr** cadence and folk songs share three main features: relative modality, a gapped diatonic scale, and a focus on melody rather than harmony. Gapped diatonic scales are first theorized in Gilchrist 1910–13 and extended in Bronson 1946. The pentatonic and hexachordal scale is not an uncommon feature of folk song; its embedding within the diatonic scale and pentatonic relative modality itself is a rich area for future research (refer again to Bronson's mode star in Figure 5.2). The sample size of four pieces below is too small to make overarching arguments about musical schemas influenced by folk song. But the three main features listed above, commonly along with pastoral musical settings, create a strong folk-song connection.

On a theoretical level, I will demonstrate that diatonic positions can define higher order musical units, with theoretical applications on par with scale degrees. In fact, compared to traditional cadences, diatonic positions and scale degrees swap roles in the definition of **lsmr** cadence. Take the authentic cadence for example. It is defined primarily by scale degrees, with the root progression $\hat{5}$-$\hat{1}$. In the major and minor modes, the root progression can take on two

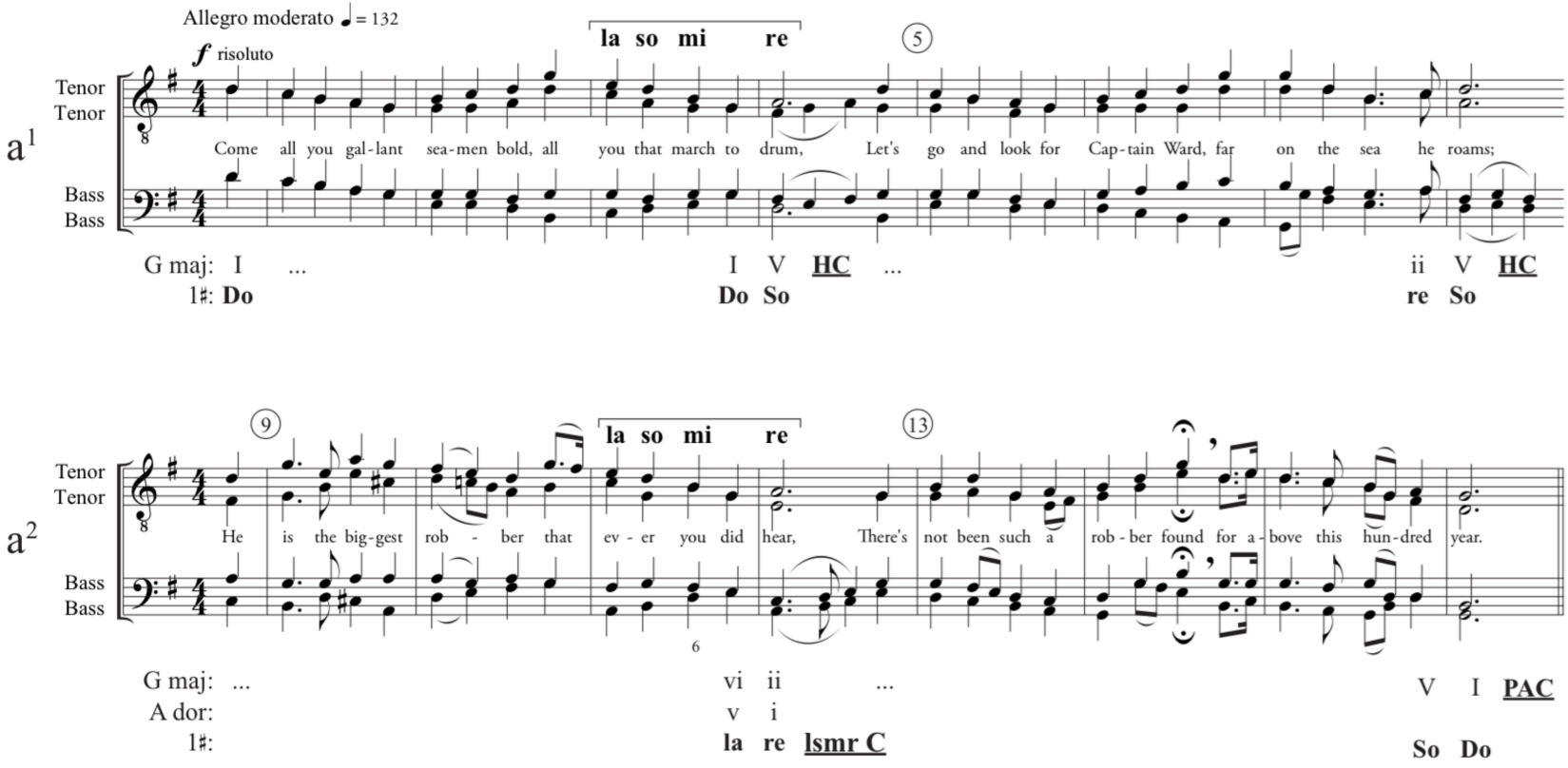
different scale-degree identities, **so-do** or **mi-la**. Figure 5.5 above shows that the **lsmr** cadence has the opposite characteristics. It is defined by diatonic positions **lsmr** in the melody, but it can be heard primarily in three different scale-degree contexts.

The four examples below show the **lsmr** cadence in different formal contexts in an order that shows the cadence in increasing prominent and structural roles, from fleeting moments to emphatic endings.

The lsmr **Cadence in an Arrangement of "Ward, the Pirate"**

Vaughan William's arrangement of the ballad "Ward, the Pirate" (Roud 224, Child 287) for men's choir (Example 5.7) is one possible folk-song origin of the **lsmr** cadence. At first glance, nothing seems out of ordinary: the arrangement is entirely in G major with a secondary dominant in m. 9. Upon closer inspection, however, there is a **lsmr** cadence that can be easily overlooked or even disregarded as a phrase end if viewed through a common-practice lens.

The key to unlocking the **lsmr** cadence in "Ward, the Pirate" is the matching melodic endings in the first (mm. 1–4) and third phrases (mm. 9–12). Both phrases end with **lsmr** in the melody, but the first phrase concludes with a **Do-So** progression in the harmony (mm. 3–4). It is an unequivocal major-mode HC, but it is not technically a **lsmr** cadence as defined above.



Example 5.7. Vaughan Williams, "Ward, the Pirate," first stanza (mm. 1–16).

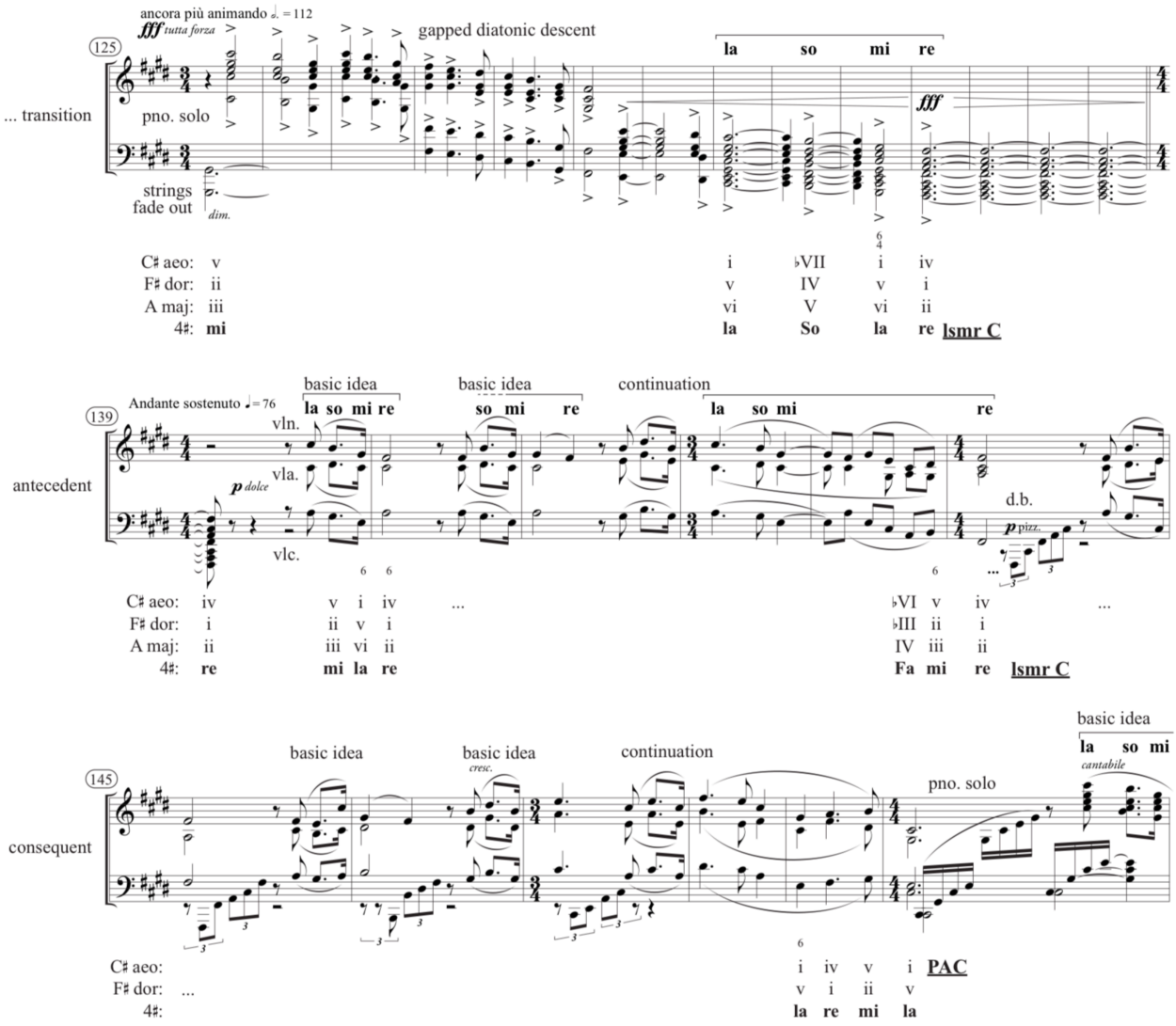
When the same melodic material returns (mm. 11–12), Vaughan Williams harmonizes it with a **la**-**re** chord progression. Hearing mm. 11–12 as a cadence is dependent on two competing factors: common-practice harmony and parallel segmentation. Hearing with strict, common-practice harmony would eliminate the cadence at mm. 11–12 entirely, treating mm. 9–16 as one phrase unit instead. One could also prioritize the parallel segmentation of phrases and relax conventional harmonic rules. If the first phrase ends on m. 4, so could the third phrase end on m. 12. Acknowledging the **lsmr** cadence as phrase ending does not determine its scale degrees, however. The **lsmr** cadence could equally be a major-mode "supertonic stop" or a relative-modal toniciziation of the supertonic, but neither contradicts the essential, diatonic-positional identity of the cadence.

In summary, Vaughan Williams harmonizes the two **lsmr** melodic endings in "Ward, the Pirate" separately with a **So** chord and a **re** chord. This makes the **re**-harmonized cadence comparable to the **So**-harmonized half cadence if common-practice rules are momentarily suspended. Yet, the **lsmr** cadence is structurally insignificant because of the dominance of the surrounding G-major material and the brief nature of the **re** chord. In the next three examples, the **lsmr** cadence carries more motivic and structural weight.

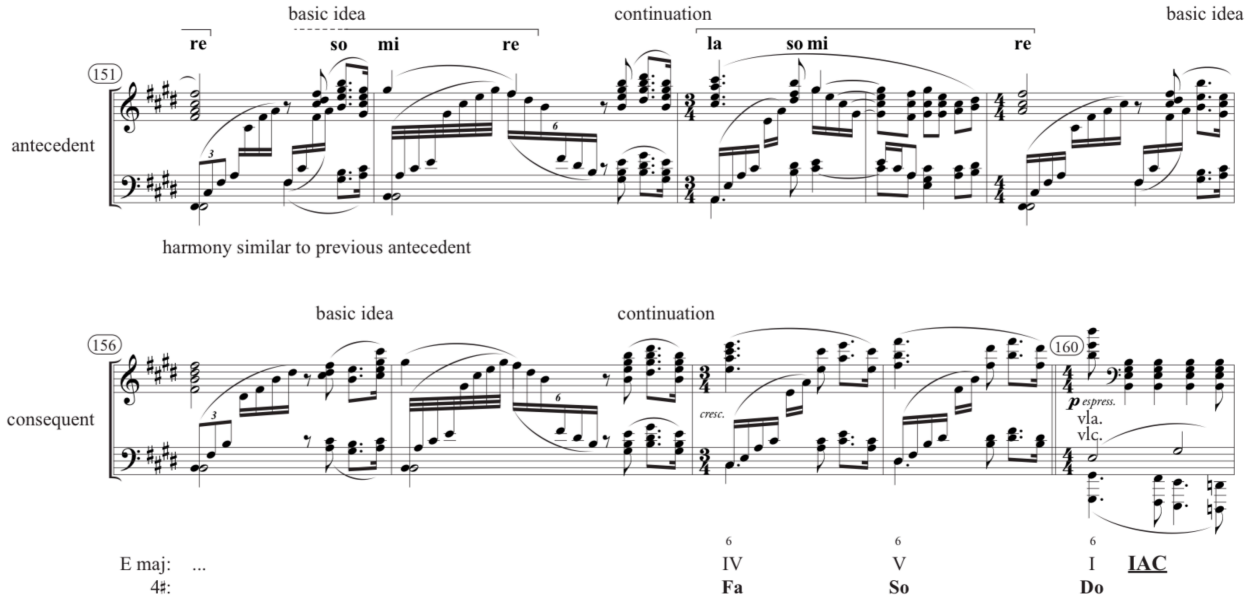
The lsmr **Cadence in the Piano Quintet**

In Vaughan Williams's otherwise Brahmsian, chromatic Piano Quintet in C minor (1903), his diatonic-modal secondary theme (Example 5.8) in 4♯ stands in stark contrast. The secondary theme is saturated with **lsmr** cadences and motives based on the same cadential material. Like "Ward, the Pirate" above, the **lsmr** cadence is not formally significant in the Piano Quintet: the secondary theme itself is nested deep in the chromatic woods, and the cadence does

not conclude the secondary theme. Unlike “Ward, the Pirate”, the **lsmr** cadence gains prominence through sheer repetition in the Piano Quintet’s secondary theme.



Example 5.8. Vaughan Williams, Piano Quintet in C minor (1903), mvt. I, mm. 125–160.



Example 5.8, continued.

The first **lsmr** cadence actually takes place preceding the secondary theme as an approaching transition. On top of a C♯-minor dominant pedal on **mi** (mm. 125–139), fully-voiced piano chords descend through the gapped diatonic scale **do-ti-la-so-mi-re**. Eventually, the **mi** pedal fades out and the piano descent grinds to a halt on **lsmr**.

The **lsmr** cadence here (mm. 132ff) is unconventionally voiced with parallel outer voices. Each of the four notes in the cadence receives its own chord, resulting in a **la-So-la$^{6}_{4}$-re** progression. Following C♯-minor material, the chord progression suggests an aeolian i-♭VII-i followed by a pause on iv, although it also hints at E major or F♯ dorian. Regardless of the tonic, the piano's dramatic and virtuosic descent puts diatonic position **re** center stage, which is a radical departure from the first theme's chromatic harmony.

The secondary theme proper consists of two parallel periods (one played by strings and one played by the piano), and the antecedents have a sentential structure saturated with **lsmr** material. After the transition's **lsmr** cadence, the **lsmr** ending is immediately compressed into

sentential basic ideas (mm. 139–41). Here, the four notes **lsmr** are harmonized with a **re^{6}-mi-la^{6}-re^{6}** progression—a suggestive i^{6}-ii-v^{6}-i^{6} progression in the dorian mode. After the two **lsmr** basic ideas, the sentential continuation expands on the **lsmr** material and delays the cadence on **re** by a measure (m. 144). Unlike the chord progression in the basic ideas, the cadential harmony **mi^{6}-re** (mm. 143–44) has a more "deceptive" quality to it. The **mi^{6}** chord could be an aeolian dominant or a major-mode dominant substitute (as iii^{6} with $\hat{5}$ in the bass), but the **mi^{6}** chord moves to a **re** chord instead, a chord familiar to the listener by the end of the phrase.

After the **lsmr**-saturated antecedents, the consequent of the first period ends on the relative aeolian PAC, and the consequent of the second ends on the relative major IAC that transitions back into chromatic harmony. However, neither the aeolian nor the major-mode cadence provides a conclusive interpretation for the **lsmr** cadence. Rather, the **lsmr** cadence is a schema defined primarily by its diatonic positions rather than scale degrees.

In "Ward, the Pirate" and the Piano Quintet, the **lsmr** cadences are enclosed by their relative major or minor modes. While the cadence is fleeting in the folk-song arrangement; in the Quintet, the cadential material gains prominence through motivic repetition. In the following two songs, **lsmr** cadences occupy the most important structural position of all: the end. The first song "The Sky Above the Roof" begins in the aeolian mode and ends on the **lsmr** cadence, and the divided emphasis reflects the narrative structure. The second song "Let Beauty Awake" features the most structurally significant use of **re** among the four examples discussed here. In this song, diatonic position **re** encloses **do** and **la** tonics in the song, reversing the structural relation between **do**/**la** and **re** seen earlier in "Ward, the Pirate" and the Piano Quintet.

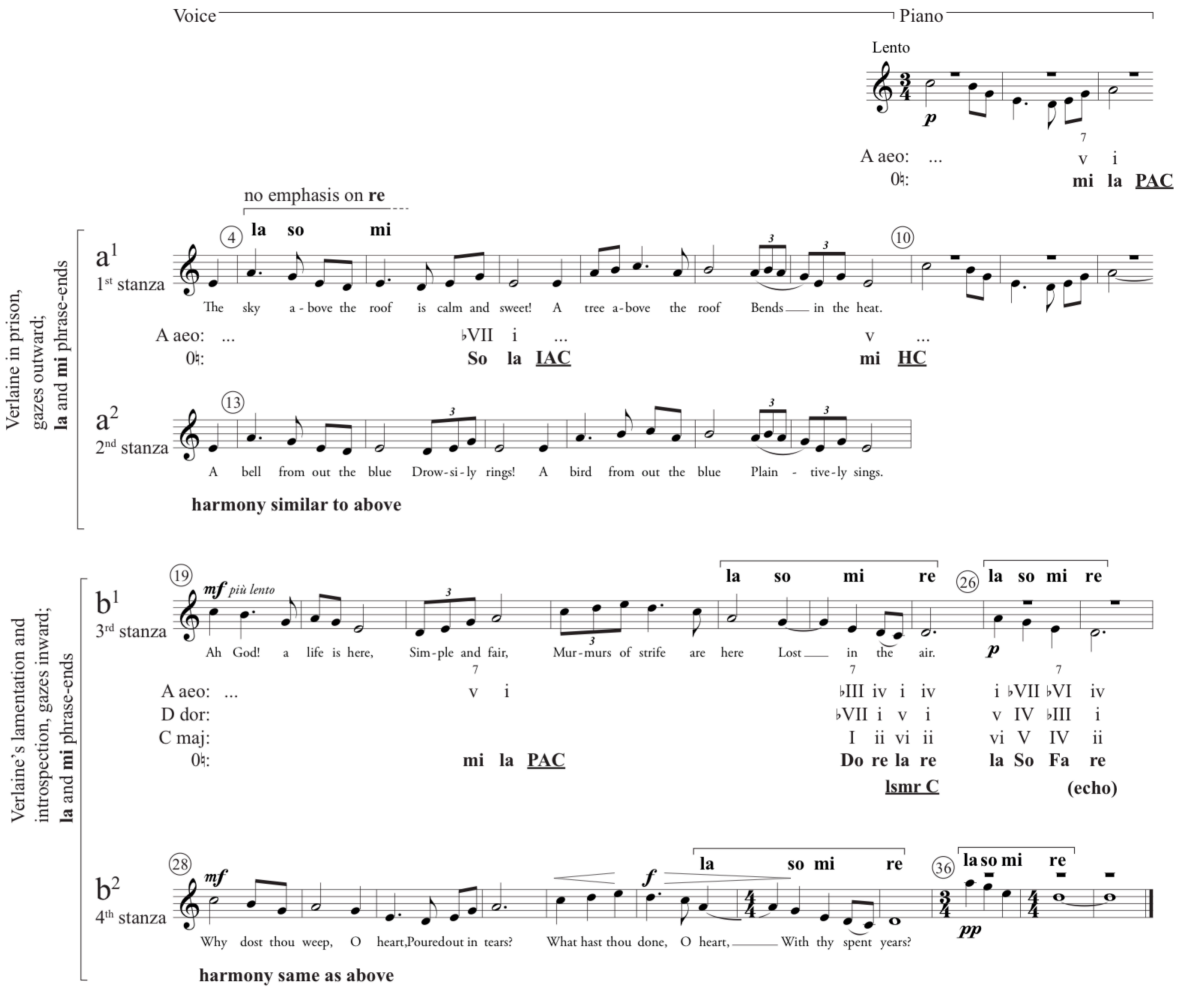
The lsmr Cadence in "The Sky Above the Roof"

Paul Verlaine's auto-biographical poem *Le ciel est, par-dessus le toit* (The Sky Above the Roof) describes his experience in prison. In the first and second stanzas, Verlaine gazes out and describes the scenery outside the prison window. In the third and fourth stanzas, Verlaine gazes inwards into himself and laments his lost youth.

In Vaughan Williams's setting of the poem (Example 5.9), tonic stability reflects the poem's two-part narrative structure.[71] Verlaine's outward gaze corresponds to an unambiguous tonic: the first two stanzas are rooted firmly in the aeolian mode. Correspondingly, the inward gaze destabilizes the aeolian centricity by ending the last two stanzas with the **lsmr** cadence. Depending on the listener's perspective, the **lsmr** cadence either introduces a new tonic or pauses inconclusively. Unlike the previous two pieces, no material follows the **lsmr** cadence, such that the inconclusive final characterizes the entire piece's structure in a more significant way.

Even though the closing **re** chord may be surprising to some, the **lsmr** pattern is tightly integrated with the melody of the entire song. The whole melody is set in the gapped diatonic scale **do-ti-la-so-mi-re** (omitting **fa**); much like the transition in the Piano Quintet, the **lsmr** cadence featured towards the end is a natural extension of the descending scale.

[71] As a point of comparison, Fauré set the French poem as *Prison*.



Example 5.9. Vaughan Williams, "The Sky Above the Roof" (1908), melody only.

In the melody, registral expansion pairs with the cadence to punctuate Verlaine's mournful ending. After reaching the zenith at high **mi** (m. 22), the voice descends pentatonically down to the **lsmr** cadence. At the arrival on **re**, however, the voice continues down to a neighboring **do**, which reaches the melody's nadir (m. 25). This **re-do-re** neighboring motion is harmonized with **re-la-re** (dorian i-v-i or aeolian iv-i-iv), which forms the song's structural cadence. In both stanzas, the expanded **lsmr** cadence is followed by an unembellished **lsmr** piano echo with near-planing harmony (m. 36). In stark contrast to the stable aeolian-mode introduction, the **lsmr** echo at the end further cements the structural importance of **re**, whether it

is a tonic or not. Between the two pairs of stanzas, the different cadential chords and their varying tonic stability juxtapose Verlaine's calm outward gaze and the dramatic introspection that follows.

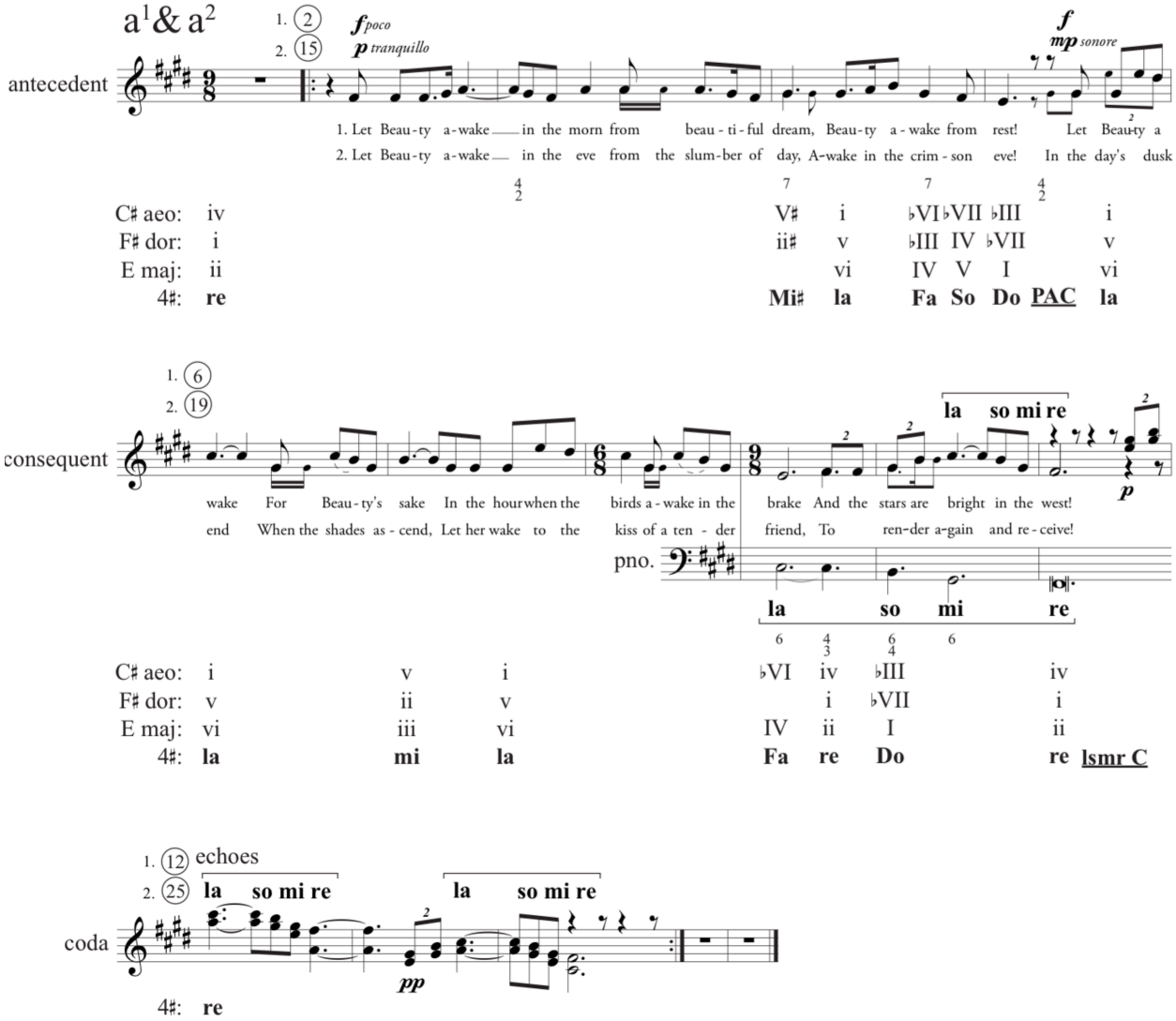
The lsmr Cadence in "Let Beauty Awake"

In "Let Beauty Awake" from *Songs of Travel* (1907), diatonic position **re** encloses the entire song (Example 5.10). The **lsmr** cadence here has the important structural role of ending a piece, and on the chord that opened the piece. Yet, the **lsmr** cadence still imparts a sense of inconclusiveness and open structure.

"Let Beauty Awake" opens with extended **re**-chord arpeggios and closes with multiple **lsmr** cadences. At the end, the melody ends with a typical **lsmr** descent (mm. 10–11), but the bass line also participates in its own rhythmically augmented **lsmr** descent that spans the entire last line (mm. 9–11). The simultaneous **lsmr** lines in the melody and bass converge in parallel octaves, and the inner voices fill out a **Do-re** progression at the end. The last **re**-chord is held for four more bars, on top of which the piano echoes **lsmr** harmonized in parallel thirds. The strophic construction joins the **lsmr** cadence with the **re**-opening, and the repetition allows the listener to experience the song in light of the ending.

In addition to the **re**-enclosure, there are also stable **do**- and **la**-centers that may linger on at the end. The repeated strophe only contains two phrases: the first phrase closes with a conventional E-major PAC (m. 5), and the second phrase closes with the radical, linear **lsmr** cadence described above. As Allan Atlas notes, the tonic "rocks seamlessly back and forth" between E and F♯, and some may hear the whole song in E major with an ending on ii (Atlas 2013, 8). For cataloguing purposes, publisher Boosey & Hawkes prefers the closing tonic of F♯

(Atlas 2013, 8).[72] The two descriptions imply different hierarchical structures, but both readings are united by their common scale and diatonic positions.



Example 5.10. Vaughan Williams, *Songs of Travel* (1907), mvt. II, "Let Beauty Awake," melody only.

While Atlas only acknowledges the major- and dorian-mode centers that end the two phrases, there are also emphases on **la** prior to the cadences in both phrases. C♯ minor makes its first appearance in m. 4, where Vaughan Williams tonicizes it with the leading tone B♯—the

[72] Atlas and Boosey & Hawkes wrongly identify the mode as F# minor/aeolian (Atlas 2013, 8). It is likely that all pieces are categorized into major or minor modes without further options.

song's only chromaticism outside of 4♯. Then, after the E-major PAC (m. 5), the second phrase begins with the chord progression **la-mi-la,** which further emphasizes the aeolian tonic by a fifth progression (mm. 6–9). By the time the listener arrives at the **lsmr** cadence, they would have experienced a kaleidoscope of **do**, **re**, and **la** centricities of varying stability.

Out of the four pieces I have analyzed, the **lsmr** cadences in "Let Beauty Awake" have the most structurally prominent roles. Yet, despite the **re**-enclosure and the **lsmr**-echoes in the piano, the presence of other common-practice centricities **do** and **la** is enough to destabilize the enclosing **re**. Therefore, the **re** chord may still be inconclusive for some, and the **lsmr** cadence here is intimately tied to the paradoxical nature of open structures (Chapter 3).

The foregoing discussion has shown how a cadence can be defined not by scale degrees but by diatonic positions. Just as a scale-degree cadence can have different diatonic positions, so can a diatonic-positional cadence have different scale degrees. In the case of the **lsmr** cadence, the inherited scale-degree ambiguity has different effects depending on its placement within the piece.

In the first two pieces, "Ward, the Pirate" and the Piano Quintet, the **lsmr** cadence is structurally less prominent. "Ward, the Pirate" is notable for the use of **re** as an alternative to a typical HC, and the Piano Quintet is notable for the saturation of **lsmr** material in all parts of a sentence structure. The **lsmr** cadences in both pieces are enclosed by cadences on **do** and **la** tonics such that the scale-degree ambiguity does not have a great effect on the overall conclusiveness of the piece or the section.

The last two pieces end with the centrically ambiguous **lsmr** cadence, and other lingering centricities make it possible to hear an off-tonic ending. In "The Sky Above the Roof," the concluding **lsmr** cadence destabilizes the established tonic to establish narrative contrast. In the

lsmr cadence's most structural role in "Let Beauty Awake," the **lsmr** cadence returns to the beginning and revisits the opening **re**. Yet, having an enclosing **re** does not guarantee tonic stability. The **do** and **la** centers in "Let Beauty Awake" make it possible to hear diatonic position **re** as an off-tonic enclosure.

Table 5.1. Summary of four different uses of the lsmr **cadence.**

Piece	structural significance	cadential progression (scale degrees in dorian mode)	placement	other centers
"Ward, the Pirate," first stanza	fleeting moment on **re**	**la-re** v-i	local phrase-end	**do**
Piano Quintet in C minor, second theme	saturation of **re** in inner section	**mi^6-re** ii^6-i	local phrase-end	**do** and **la**
"The Sky Above the Roof"	**re**-ending that does not agree with **la**-opening, piano echoes of **lsmr**	**la-re** v-i	end of song	**la**
"Let Beauty Awake," *Songs of Travel*	**re**-enclosure, coda repetition of **lsmr** that loops back to beginning	**Do-re** ♭ VII-i	end of song	**do** and **la**

***

In this chapter, I have argued that relative modality is inseparable from English folk song and the music it inspired. Sharp's seminal *EFS* and *Folk Songs from Somerset* showed how he understood folk songs and their multiple tone centers, and how his subsequent folk-song harmonization reinforced the relative modality within the melodies. Vaughan Williams takes folk-song harmonization one step further by amplifying relative modality in a variety of artful ways. The case study on the **lsmr** cadence in Vaughan Williams's early works showed that relative modality continued to play an important role in marked melodic-harmonic patterns that were borrowed from folk song.

Chapter 6: Locrian Rarities

With reference to conventional orientation of the diatonic scale, the major-mode $\hat{4}$ and $\hat{7}$, the lydian and locrian tonics lie on the position-finding tritone **fa** and **ti** (Browne 1981), opposite ends on the diatonic slide rule (Table 6.1). The "flattest" (leftmost) lydian tonic (**fa**) involves the sharpest set of scale degrees, and the "sharpest" locrian tonic (**ti**) involves the flattest scale degrees. Inflectionally, the locrian mode is also the furthest away of all diatonic modes from major/minor modes, requiring two additional accidentals to reach parallel major or aeolian modes (e.g., B locrian to B aeolian or B♭ major).

Table 6.1. Lydian and locrian modes on the diatonic slide rule.

	fa	**do**	**so**	**re**	**la**	**mi**	**ti**
lydian:	$\hat{1}$	$\hat{5}$	$\hat{2}$	$\hat{6}$	$\hat{3}$	$\hat{7}$	$\sharp\hat{4}$
locrian:	$\flat\hat{5}$	$\flat\hat{2}$	$\flat\hat{6}$	$\flat\hat{3}$	$\flat\hat{7}$	$\hat{4}$	$\hat{1}$

In Chapter 3, I argued that the lydian mode is the easiest mode to assimilate into common-practice harmony: despite the tritone between $\sharp\hat{4}$ and $\natural\hat{1}$, $\sharp\hat{4}$ could resolve to $\natural\hat{5}$ in the major-mode capacity of $\natural\hat{7}$/V. In contrast, the locrian mode is seemingly antithetical to common-practice harmony; the tritone between $\natural\hat{1}$ and $\flat\hat{5}$ replaces the consonant pillars of tonal theory ($\natural\hat{1}$ and $\natural\hat{5}$). Whether used as a linear interval or as a vertical interval, the $\natural\hat{1}$-$\flat\hat{5}$ dissonance removes important cues for centricity: consonant $\natural\hat{5}$-$\natural\hat{1}$, consonant V-I, or, even more basically, a consonant tonic triad. The locrian tonic triad is also categorically different as an extension of major/minor harmony, since the root-position diminished triad is generally prohibited in traditional tonal theory, even when it is not the tonic.[73] Moreover, the tritone and its resolution

[73] Kirnberger identifies a "consonant" form of the diminished triad sometimes found in the minor mode and fifth progressions (Lester 1992, 243).

are emblematic of common-practice harmony (Egmond and Butler 1997; Browne 1981; Fétis 2008). Replacing a foundational consonance with an equally foundational dissonance creates a seemingly paradoxical situation within a diatonic, tertian style. Because of this seemingly prohibitive tritonal dissonance, the locrian mode is often described as merely a "theoretical possibility" (Henry and Rogers 2004, 71; Aldwell and Cadwallader 2018, 17), a conceptual curiosity that is mentioned more than it is used.[74]

All the same, in this chapter I will show that the locrian mode is an excellent example of relative modality at work. A few convincing examples will be sufficient to argue for the validity of locrian centricity; but the central idea underpinning this chapter is that the dissonant, unstable, and unfamiliar locrian scale degrees in fact bring diatonic positions into sharp focus. After a brief historical overview, I will take up three case studies of the locrian mode in twentieth-century music in diverse styles (Gelineau Psalmody, Shostakovich, and Debussy).

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The Locrian Mode before the Twentieth Century

The cautious acceptance of the locrian mode in the twentieth century accompanied the aesthetic shift of admitting dissonances as harmonically valid in their own right (a shift that has been much-discussed in the music-theoretic and musicological literature). However, even before the twentieth century, the locrian mode was long recognized as a theoretical entity. A crucial concept underpinning the locrian mode's "theoretical" status is *diatonic completeness*—taking scalar rotation to its logical conclusion by exhausting the diatonic scale's centric possibilities. Indeed, save this, there is little reason historically to have theorized the locrian mode.

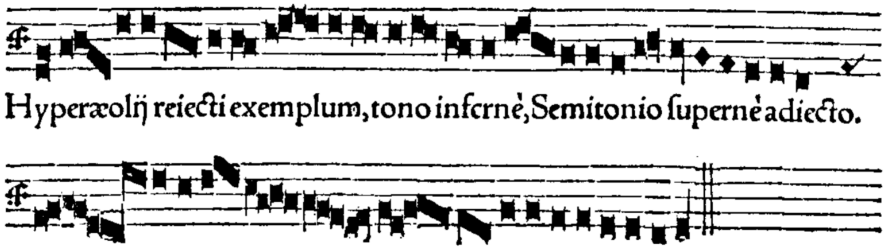
[74] Such treatment goes back to Glarean's introduction—and immediate rejection—of the locrian mode into Renaissance music theory.

Historically, the theorists Glarean and Reicha both objected to the locrian mode, but they took two opposite approaches to dealing with it. Glarean discusses the locrian mode at length, with musical examples, while the locrian mode is a glaring omission in Reicha's theory.

Octave species and diatonic completeness are such fundamental concepts in Glarean's *Dodecachordon* that he discusses the locrian modes at length despite rejecting them. The Greek ethnic name "locrian" appeared sometime after Glarean's *Dodecachordon* ([1547] 1965). In the treatise, Glarean did not provide ethnic names for the authentic and plagal forms of the "locrian mode;" rather, he named them according to the modes one step below, Hyperaeolian and Hyperphrygian, respectively. Glarean acknowledges the locrian modes as rotations of the octave species, but he rejects them as "spurious modes" (120) "unworthy for the ears of learned men" (151) and attributes locrian-mode chant's rarity directly to its tritone division (111–113, 150).[75]

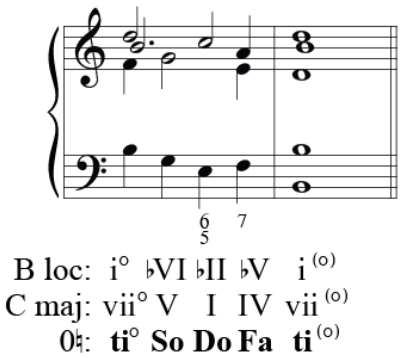
Despite Glarean's rejection of the dissonant modes, not only does he list the Hyperaeolian and Hyperphrygian modes alongside other modes, but he also commissioned counter-exemplary works in the Hyperaeolian mode (Example 6.1) "not so much for the sake of imitation as of demonstration" (Glarean, 269).[76] To further solidify the illegitimacy of the Locrian mode in his theory, Glarean criticizes those who write in such a mode, claiming that "one still finds songs of this sort among composers who sink to such absurdities in their immoderate thirst for fame" because they are "pleased only with new things" (151).

[75] See Judd 2006, Fuller 1996 for overview of Glarean's *Dodecachordon*.
[76] Sixtus Dietrich also provided a polyphonic setting of this chant, in which the locrian final, B, is consistently harmonized with an E below instead of B. Here, he takes advantage of the typical Renaissance technique where the melodic final can be harmonized as the fifth of a chord. Also, the locrian mode did not appear in Glarean's first derivation of modes, in which he appended perfect fifths and perfect fourths to the central (hexachordal) **re-mi-fa-so** tetrachord ([1547] 1965, 106–107).



Example 6.1. Sixtus Dietrich of Constance, untexted chant (Glarean [1547] 1965, 113).

The youthful, experimental Reicha in the 1800s was certainly pleased with new things; nevertheless, the locrian mode is omitted in his theory of modal tonicization (Chapter 2). Reicha's numbering system stops short of the locrian mode, which would hypothetically be the *sixième gamme relative sur la septième ton* (see my hypothetical Example 6.2; I will discuss a similar progression by Shostakovich later in this chapter). Even though Reicha claims that "no tone of the major scale [...] is foreign to emotion" (*PPA*, 196), his writings contains no mention of the locrian tonic whatsoever.[77] Despite his experimentalism, the dissonant tonic is a stylistic boundary that Reicha does not cross.



Example 6.2. A hypothetical locrian rotation of Reicha's cadence in *PPA*.

[77] "Da nun dem Gefühle in solchem Falle kein Ton der harten Scala von C fremd ist: so kann ihm auch keine Verbindung dieser Töne (folglich auch kein Accord der durch dieser Töne möglich ist) fremd vorkommen" (*PPA*, 196).

The Locrian Mode in the Twentieth Century

Twentieth-century modernism introduced a greater freedom as far as usage of dissonance is concerned; the cautious inclusion of the locrian mode in the mid-century theoretical works of American music theorists John Vincent (1951) and Vincent Persichetti (1961) attests to this aesthetic shift.[78] Thus, the twentieth century ushered in the seventh and last tonic involved in relative modality. If **do**, **re**, **mi**, **fa**, **so**, and **la** could be tonics, then so could **ti**, a traditional modal "*diabolus in musica*" that is nevertheless a necessary evil for diatonic completeness. Therefore, this chapter completes the recognition of tonic potential in all diatonic positions—**ti** included. Correspondingly, all diatonic positions can assume all scale-degree roles. For example, **mi** can now be $\hat{4}$, the phrygian mode can also be a relative subdominant, and the phrygian mode also has a relative dominant. Furthermore, from an inflectional view, each tonic would have seven possible scales. Adding one flat to a phrygian tonic would not preclude the result having potential tonic status.

Despite Persichetti and Vincent's inclusion of the locrian mode in their theories, they are wary of the dissonant tonic's potential instability. In keeping with Persichetti's emphasis on "creative ideas and compositional stimulation" (1961, 3), he considers the tritone relationship a "thematic characteristic" (1961, 38) and provides a locrian march with a i^{o}-$\flat V^{7}$ oscillation (his Example 2-14). Despite his open-minded attitude to the locrian tonic, however, Persichetti found it necessarily to include ways to mitigate the locrian tritone, including tonic unison, fifth-omission, added-note tonic, or first inversion tonic (1961, 37), most of which can be seen later in this chapter.

[78] Although popular music is beyond the scope of this dissertation, Rock and heavy metal's frequent use of the locrian $\flat\hat{5}$ is noteworthy (Biamonte 2012). One such example is the intro in Rush's "YYZ" (1981).

Similar to Persichetti, Vincent comments that the locrian tonic triad is rare because of its "lack of repose"; "only some exceptional intention of the composer could justify its employment" (42), one example being his own string quartet that ends on a locrian plagal cadence (IV-iº) (1951, 44).[79] Vincent devotes a full chapter to defend the locrian mode from major/minor bias, with examples from diverse sources such as chant and folk song. He comments that "the listener, unaccustomed to hearing the mode and prejudiced by his exclusive major/minor experience, does not readily comprehend the component tones of the melody through their relationship to the strange tonic" (Vincent 1951, 144).

Vincent's description above could also apply to all non-major/minor modes. "Prejudiced" listeners may feel that, for example, Holst's dorian cadence (Example 1.1 in the Introduction), Beethoven's lydian cadence (Example 3.1 in Chapter 3), and Gigout's mixolydian cadence (Example 4.1 in Chapter 4) all lack repose. Just as a mixolydian close may be heard as an unstable major-mode V, a locrian close may be heard as an unstable major-mode viiº. Framed in relative-modal terms, **ti** is such a strong indicator of common-practice resolution that its relative major-mode scale degree outweighs all other locrian centricity cues. In the larger context of stability, the distinction is one of degree between open and closed structures (Figure 6.1). In the diatonic-modally extended common-practice—all else being equal—major/minor modes would be the most stable, the locrian mode the most unstable, and all other modes in between.

[79] Besides his own composition, most of Vincent's examples are temporarily inflected tonics such as iº-I (1951, 42–43). Vincent also cites a short locrian example (Hábas's Example 123) in Czech theorist Alois Hábas's speculative treatise, now mostly known for its microtonal theory.

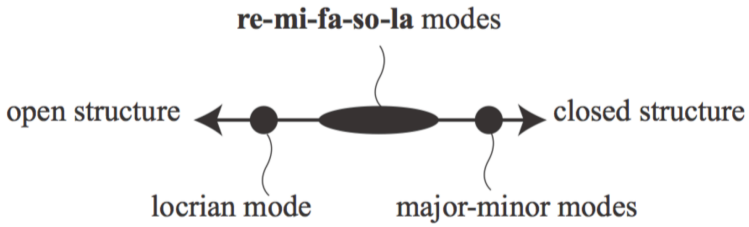
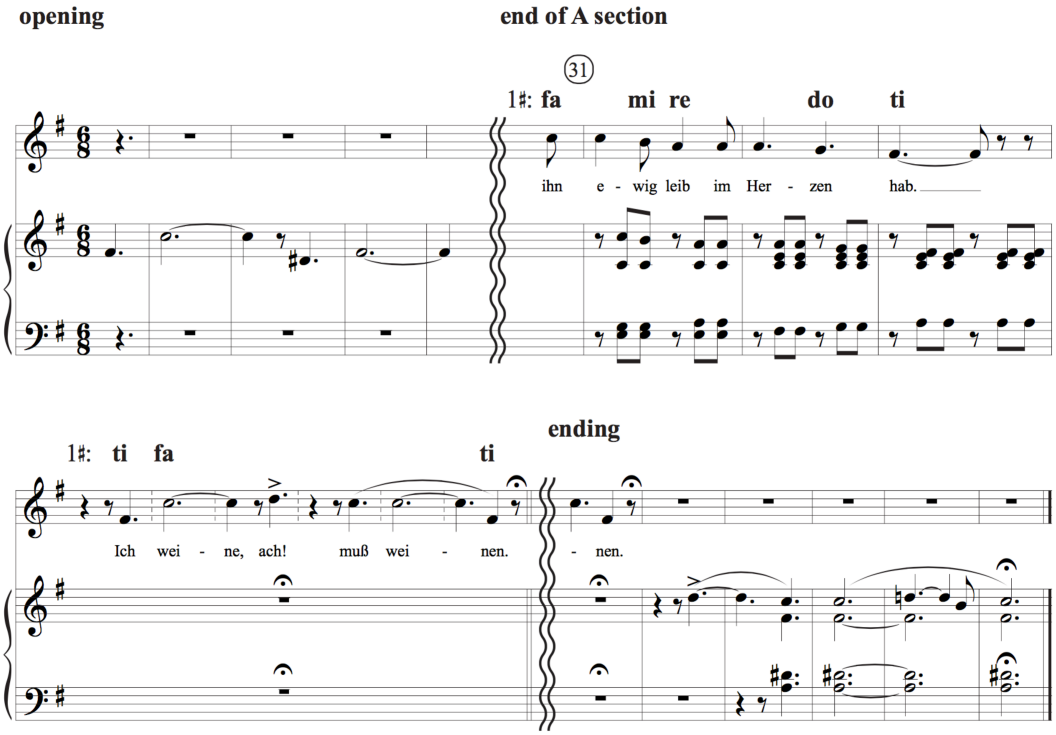


Figure 6.1. Continuum between open and closed structures.

To demonstrate why theorists were cautious in their compositional or analytical use of the locrian mode, I will use Liszt's *Verlassen* to demonstrate the locrian mode's affinity with open structures. *Verlassen* (Example 6.3) is an example of an unresolved, dominant-based (and dominant-function) structure (Satyendra 1995), previously discussed in Chapter 3. A near-locrian example within the song suggests that its diminished tonic can overlap with open structures and yet unite in diatonic positions.



Example 6.3. Liszt, *Verlassen* (1880), opening, end of A section (mm. 31–34), and ending.

In *Verlassen*, the melodic line heavily emphasizes F♯ and C, and most of the sections are enclosed by contextually structural D♯^{o7} chords. A small portion of *Verlassen* at the end of A section (mm. 31–34) is close to being a nineteenth-century example of the locrian mode. It is strictly in 1♯ (with D♮ instead of D♯), and it includes stepwise and intervallic emphasis of **fa-ti** (locrian ♭$\hat{5}$-$\hat{1}$) over **ti**^{ø7} chords that would resolve to a fleeting E-major section.

Verlassen demonstrates the locrian mode's affinity with open structures. Yet this example raises another question. The late nineteenth and early twentieth centuries brought about essential ingredients for the locrian mode, mainly emphasis on dissonant organization and open structure. This period saw different ways that the tritone and related sonorities could be used as fundamental structural devices, and the locrian mode's dissonant characteristics could easily be understood using concepts of "dissonant prolongation" (Morgan 1976), "dissonant counterpoint" (Cowell 1930; Spliker 2011), or a kind of "dissonant tonic" (Harrison 2016, 95–116). The rarity of the locrian mode in the twentieth century is in fact somewhat odd considering the flourishing of all the other diatonic modes and tritone-based organization.

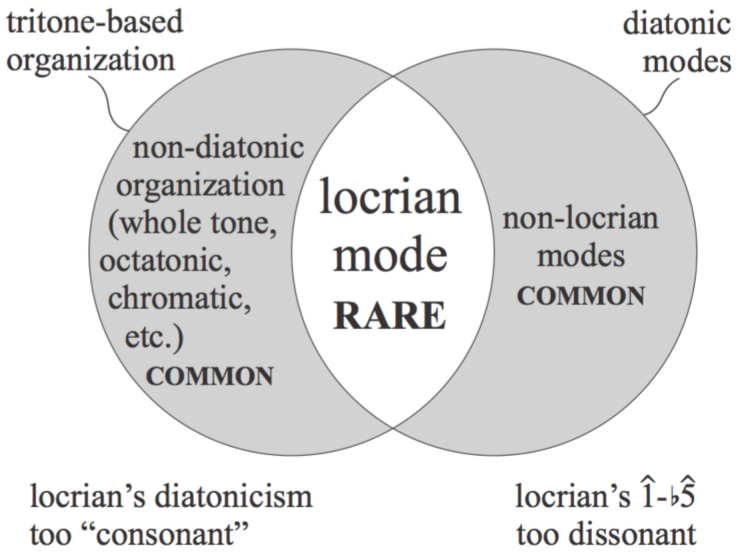


Figure 6.2. Venn diagram showing the locrian mode as the intersection between tritone-based organization and diatonic modes.

The locrian mode combines tritone-based organization and diatonicism (Figure 6.2). In the abstract, these two elements are not mutually exclusive; however, the locrian mode is rare even in the music of composers who used both tritone-based organization and diatonic modes (such as Debussy, Stravinsky, and Bartók). In other words, the locrian mode was a stylistic no-man's land that sat at the juncture between dissonant organization and diatonic modes. (In this regard, the locrian mode is more remarkable in that it straddles both consonant and dissonant organization in a unique way.) The precise historical and aesthetic reasons behind the rarity of the locrian mode in this period is a possible area for future research, but I hypothesize that the diatonic scale's strong associations with common-practice tonality made it unsuitable for dissonance-based music (never mind which tone center), and that the locrian tonic triad was too dissonant for composers using the diatonic scale. In other words, the two grey circles in Figure 6.2 rarely intersected.

To summarize, theorists before the twentieth century rejected the locrian mode, but Glarean discussed it at great length in order to complete his treatment of the diatonic scale. Greater freedom in usage of dissonance in the twentieth century prompted more theoretical literature on the locrian mode, in which special attention is paid to the dissonant tonic's effect on its stability. Despite this, the locrian mode remained a rarity even in the twentieth century.

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Three Case Studies

Three case studies of the locrian mode in twentieth-century music follow. In these, dissonance and diatonicism converge. First, I will illustrate how liturgical composers avoided the locrian-mode $\flat\hat{5}$ in Gelineau Psalmody, which contains all seven diatonic modes for liturgical

psalms and antiphons. Then, I will examine how Shostakovich celebrates $\flat\hat{5}$ in locrian harmonic progressions, fugue subjects, and modulations. Lastly, discussing a four-bar segment by Debussy, I will show what kind of analytical affordances recognizing locrian mode creates. Aspects of relative modality—diatonic positions and open structures—are the central thread that runs through all three case studies.

Gelineau Psalmody

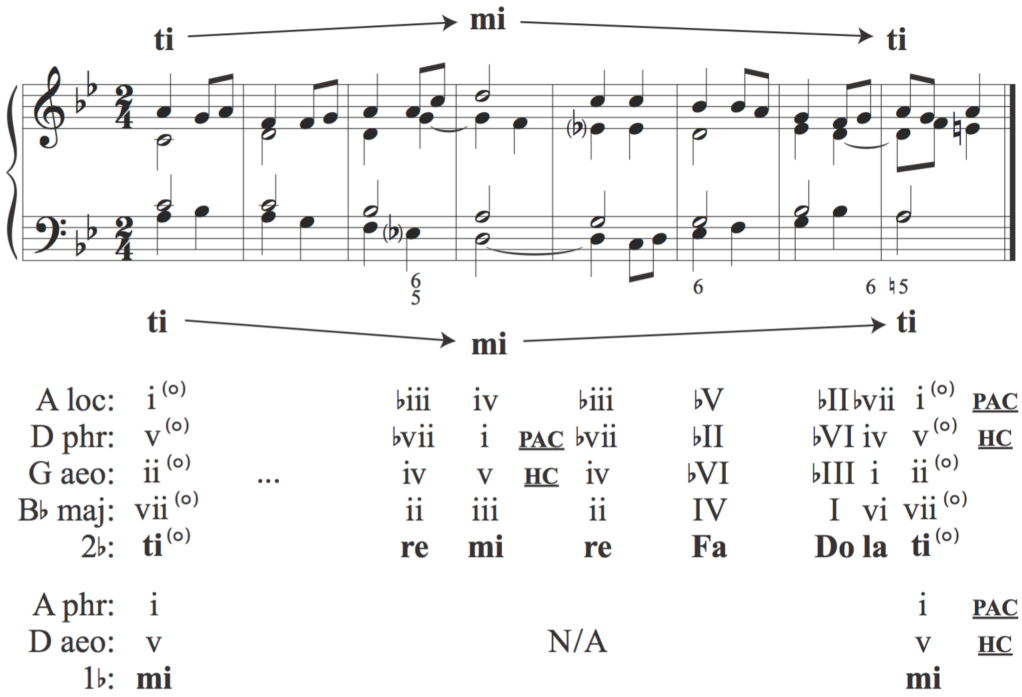
Rather like nineteenth-century Gregorian tonality (Chapter 4), twentieth-century French and English liturgical music *Gelineau psalmody* was a source of diatonic innovation that stemmed from an enforced prescription of modes.[80] This section examines Gelineau Psalmody's unique "locrian" construction—a construction that avoids tritones. Named after composer Joseph Gelineau, these psalm tones are chants used to sing metered psalms that mimicked the Hebrew originals. Composers wrote mode-matching antiphons to Gelineau psalm tones, and the repertoire of Gelineau antiphons continues to grow today (Guimont 2012). Gelineau adopts a "seven-diatonic-mode system" with each mode named after French *voces*—**do, re, mi, fa, so, la, si** (in place of **ti**)—making it one of the few practices that use the locrian mode as a regular modal member rather than a novelty.

Similar to Reicha's stance on modes, Gelineau states that modes provide a greater musical diversity: "In comparison with the [major and minor] modes intimately linked to tonal music, the tradition of ecclesiastical chant has greater wealth to offer. The variety it loses by lacking the possibility of modulating or changing tones, is amply compensated for by the diversity of its modes" (Gelineau 1965, 84). Gelineau describes modes like Gregorian chant

[80] *See* Wilson-Dickson 1992 for an overview of Gelineau Psalmody situated in the history of Christian music (1992, 386–90).

modes—though not in great detail—that encode information analogous to repercussio and melodic formulas. While Glarean rejects the two locrian modes because no such chant exist, Gelineau argues that **si-**mode chants were classified incorrectly or that their finals were altered; therefore, Gelineau deemed it "more than desirable to restore its originality to this incomparable and highly ecumenical mode" (Gelineau 1965, 84).

A French antiphon labeled "*Mode: **si**. Tonique: **la**.*" and "Mode: **te**. Tonic: **A**" (Example 6.4) exemplifies the pitch structure of locrian psalms and antiphons. Gelineau antiphons are not strictly "locrian" under my definition of modes as centricity within a scale. Rather, Gelineau's locrian construct typically evokes both parallel and relative phrygian modes to avoid vertical and linear tritones, respectively.



French text: Je bénirai le Seigneur en tout temps, sa louange sans cesse à ma bouche (Psalm 34[33]:1).
English translation: I will bless the Lord at all times: his praise shall continually be in my mouth.

Example 6.4. Pierre-Yves Meugé, Gelineau antiphon to Psalm 34[33], from *Cinquante-trois psaumes et quatre cantiques* (1955). © Copyright 1955 by *Editions du Cerf*.

Diminished locrian tonic triads are never used in the enclosing chords of Gelineau pieces. To avoid vertical tritones, antiphon composers typically omit ♭$\hat{5}$ or inflect ♭$\hat{5}$ to ♮$\hat{5}$, and Example 6.4 shows these two techniques in the first and last chords, respectively.[81] By avoiding the characteristic ♭$\hat{5}$, the enclosing A-locrian tonics evokes the parallel A-phrygian. The use of temporary phrygian ♮$\hat{5}$ in a supposedly locrian tonic is analogous to a "Picardy" ♮$\hat{3}$ in the dorian mode, which can be thought of a temporary mixolydian inflection (Chapter 6).[82]

To avoid linear tritones, antiphon composers opted to emphasize the locrian subdominant (the only non-flattened scale degree other than the tonic) as melodic and harmonic poles. Instead of engaging the locrian dominant **fa**, a diatonic wedge takes the opening **ti** to a mid-phrase pause (or cadence) on **mi**—locrian iv, phrygian i, or aeolian v—before returning to **ti**. The pause on **mi** recalls the stepwise octave-convergence at the beginning and ending, reinforcing the like-mode relation between D phrygian and A phrygian.

Avoiding the characteristic dissonant ♭$\hat{5}$ may indeed have been the best way to place the locrian mode on equal expressive footing with all other diatonic modes for liturgical use. However, avoiding a mode's characteristic scale degree significantly weakens its scalar identity. In Gelineau Psalmody, the avoidance of linear and vertical tritones instead highlights relative and parallel phrygian modes, respectively.

Shostakovich's Locrian Mode

In contrast with Gelineau Psalmody's avoidance of ♭$\hat{5}$, Shostakovich revels in the use of

[81] Persichetti mentions both omission and alteration of ♭$\hat{5}$ to mitigate the locrian tritone (1967, 37).

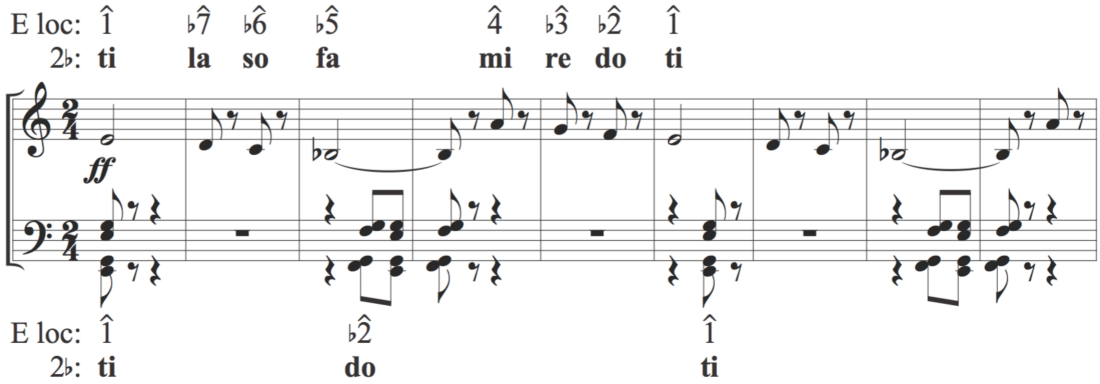
[82] The use of ♮$\hat{5}$ in an open-fifth chord relates to the concept *tonal fusion* (Huron 2001), whereby a complex tone may suggest an upper perfect fifth through its harmonic, or put the other way, an open-fifth chord may suggest a single complex tone instead of two pitches. Regardless, tonal fusion does not validate or invalidate locrian centricities since the argument goes both ways.

♭ $\hat{5}$. Soviet theorists such as Mazel and Dolzhansky have discussed his penchant for lowered scale degrees, such as the eight-note *maximum lowered* scale (♮$\hat{1}$ ♭$\hat{2}$ ♭$\hat{3}$ ♭$\hat{4}$ ♭$\hat{5}$ ♭$\hat{6}$ ♭$\hat{7}$ ♭$\hat{8}$) or the *lowered/intensified phrygian* (♮$\hat{1}$ ♭$\hat{2}$ ♭$\hat{3}$ ♭$\hat{4}$ ♮$\hat{5}$ ♭$\hat{6}$ ♭$\hat{7}$) (Carpenter 1995, 92–98; 1988, 1369–1424). In connection with relative modality, later Soviet theorists also derived the locrian mode through rotation of the diatonic scale ("tonal modulation"), although attention has been paid mostly to expanded and altered diatonic modes (Carpenter 1995, 84, 98–103). Below, I will show how the locrian mode participates in relative modality through six Shostakovich excerpts. The excerpts are ordered to show a decreasing emphasis on **ti**, from an initial excerpt in which **ti** is clearly a tonic to a final excerpt in which it barely behaves as a tonic; the one unwavering commonality throughout these excerpts is the diatonic positions involved. This is to show that an increasing familiarity with the locrian tonic will invite possible locrian interpretations where ambiguity arises.

I will begin with Example 6.5, in which an elaborated **ti^{o}** chord opens one of Shsotakovich's signature aggressive scherzos. The opening of the example shows basic scale-degree movement over a static tonic harmony. The melody contains a full tonic-to-tonic descent––a locrian *Joy to the World*. It is octave-displaced at the tritone division, emphasizing the whole-tone tetrachord **ti-la-so-fa** as $\hat{1}$-♭$\hat{7}$-♭$\hat{6}$-♭$\hat{5}$ at the beginning.[83] Like the Gelineau antiphon above (Example 6.4), Shostakovich harmonizes the melody with a $\hat{1}$-♭$\hat{3}$ dyad, temporarily omitting ♭$\hat{5}$ for the sake of tonic stability. In the bass, $\hat{1}$ is embellished with a neighboring motion to ♭$\hat{2}$, usually associated with the phrygian mode. Even with such basic scale-degree movement and the clarity of the underlying chord, the dissonance and unfamiliarity of the locrian mode make it

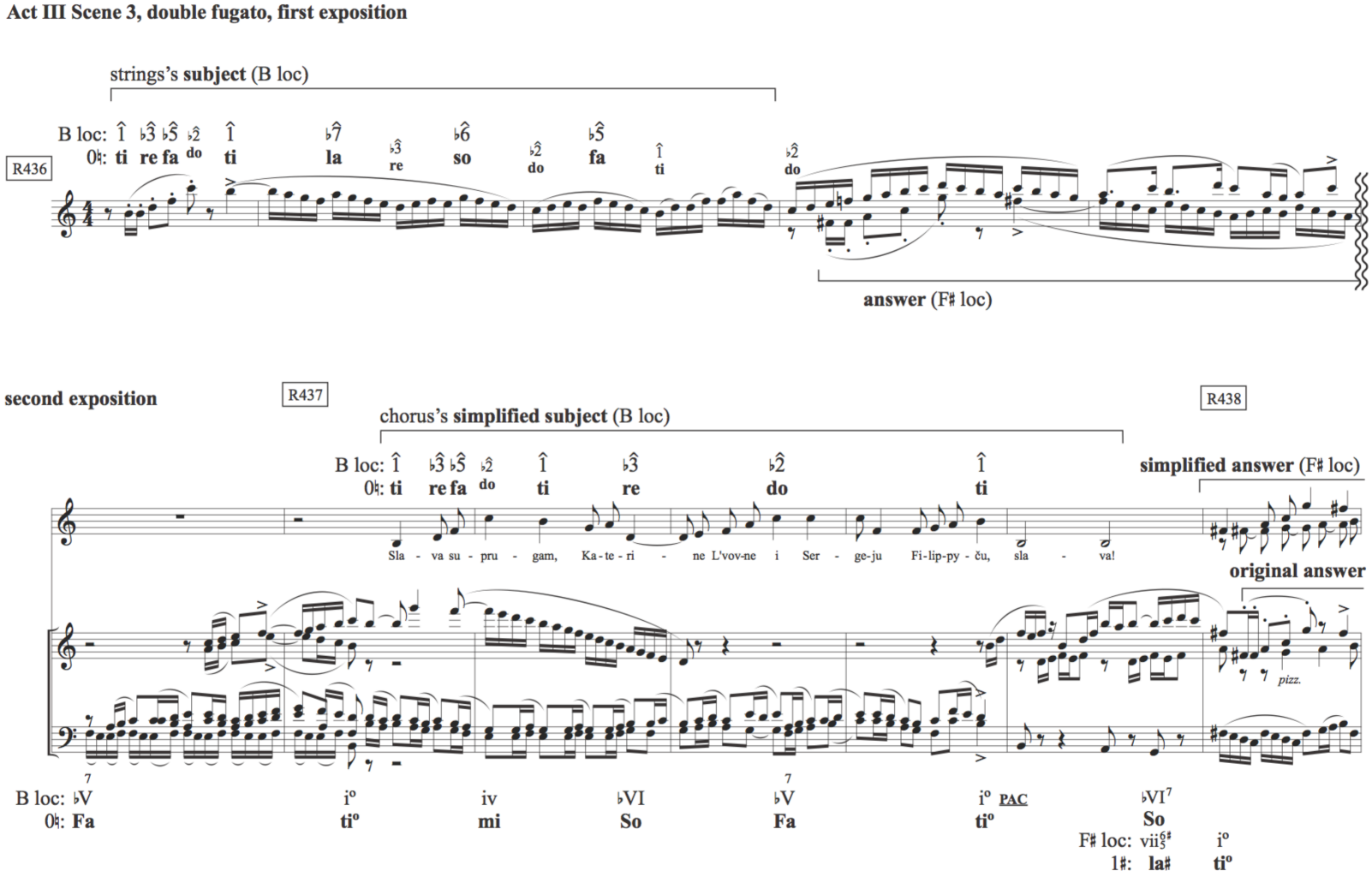
[83] In a later statement of the theme (mm. 196ff), the locrian scale is juxtaposed with octatonic fragments (Mishra 2008, 254–55).

easy to hear it instead in the relative major mode. As a result, despite having no other chords present, the scale degrees remain ambiguous.



Example 6.5. Shostakovich, String Quartet No. 10 in A♭ Major, Op. 118 (1964), mvt. II, Allegro furioso, mm. 1–9. © Copyright 1964 by *Musikverlag Hans Sikorski*.

Shostakovich uses locrian-mode fugue subjects with comparative frequency; Dolzhansky identifies three fugue subjects as locrian (1965, 14), likely because of their opening or enclosing **ti**'s, and I will discuss all of them. The most locrian-saturated subject is in the double fugato that opens the wedding song "Love Live the Happy Couple" from Act III, scene 3 in Shostakovich's *Lady Macbeth of the Mtsensk District*, Op. 29 (1934). The dissonant tonic certainly suits the tension undercutting Katerina's wedding celebrations in the scene, during which a corpse she hid will soon be found (Fay 2002). Katerina later dies after evading the police.



Example 6.6. Shostakovich, *Lady Macbeth of the Mtsensk District*, Op. 29 (1934), Act III, Scene 3, R436–R437.

Example 6.6 shows the opening bars of the strings' and the chorus's expositions, in which the entries alternate between B- and F♯-locrian subjects (Table 6.2). The strings's subject first outlines the tonic-triad arpeggio (1̂ ♭3̂ ♭5̂ 1̂) and then descends by fifths (♭7̂ ♭3̂ ♭6̂ ♭2̂ ♭5̂ 1̂). The arpeggio aside, the major-mode tonic is also emphasized as the locrian tonic's neighbor note in the opening (R436) and at the end of the subject on the downbeat (R436+3). At R436+3, it may even seem that **ti**^{ø7} resolves to the downbeat **do** before swiftly "evading" to 1♯. The quick scalar nature of the subject muddles scale-degree qualities even further, since no single note is particularly emphasized in the subject's scalar segments. In summary, although the strings' subject opens with a locrian tonic arpeggio, it can still be heard as an off-tonic opening in the relative major mode instead.

Table 6.2. Shostakovich, *Lady Macbeth*, Act III, Scene 3, fugue subjects.

strings's fugato exposition				chorus's fugato exposition				dissolves into non-diatonic music
0♮	1♯	0♮	1♯	0♮	1♯	0♮	1♯	
B-**ti**	F♯-**ti**	B-**ti**	F♯-**ti**	B-**ti**	F♯-**ti**	B-**ti**	F♯-**ti**	

From a major-mode perspective, a move from 0♮ to 1♯ cannot be more trivial. But from a locrian-mode point of view, the subject's "dominant" modulation to 1♯ is quite noteworthy, because the new F♯ tonic is not the old key's dominant despite being in a closely-related scale. This is because the locrian tonic dominant lies on **fa**, a move sharpwise inflects the original dominant from F-**fa** to F♯-**ti**. The new locrian tonic is itself the newly inflected note, so a modulation to a "closely-related" locrian mode introduces a chromatic dominant. Alternatively, a diatonic dominant locrian produces a remote key: preserving the original dominant note and modulating to F♮ locrian incurs six flats rather than one sharp!

After the strings' fugato, the chorus sings another fugato on a simplified version of the subject (refer to Example 6.6). The chorus fugato is remarkable in three ways. First, the chorus's subject (R437–R437+3) is a rare example of a sung melody that is enclosed by locrian tonics (B in the 0♮ scale). Second, taken at face value, it is a celebratory wedding song "long live the happy couple"; however, the dissonant mode can be seen as a foreshadowing of Katerina's death in the next act. Third, the strings harmonize the melody with an unabashed locrian progression, an example of dissonant tonic, dissonant prolongation, and dissonant counterpoint at the same time. Figure 6.3 is a harmonic reduction from a locrian perspective. This, in effect, realizes the missing diatonic rotation in Reicha's relative cadences *sixième gamme relative* (see again Example 6.2 above). The fully harmonized, sudden modulation from B locrian to F♯ locrian (R438) is facilitated by an enharmonically reinterpreted ♮$\hat{7}$-$\hat{1}$/♭$\hat{2}$– $\hat{1}$ as an augmented-sixth resolution into the new F♯ tonic (arrows in Figure 6.3). In short, the fugato "Love live the couple" (for a short-lived marriage) seemingly normalizes the locrian mode with locrian melodies, harmonic progressions, and same-mode modulations. Such normative use gives a glimpse of what locrian scale degrees may sound like; at the same time, its unfamiliarity and the ambiguity of scale degrees in context bring diatonic positions into sharper focus.

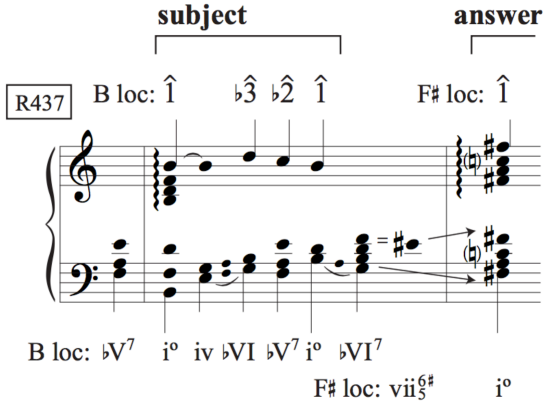


Figure 6.3. Shostakovich, *Lady Macbeth*, Act II, Scene 3, reduction of R437.

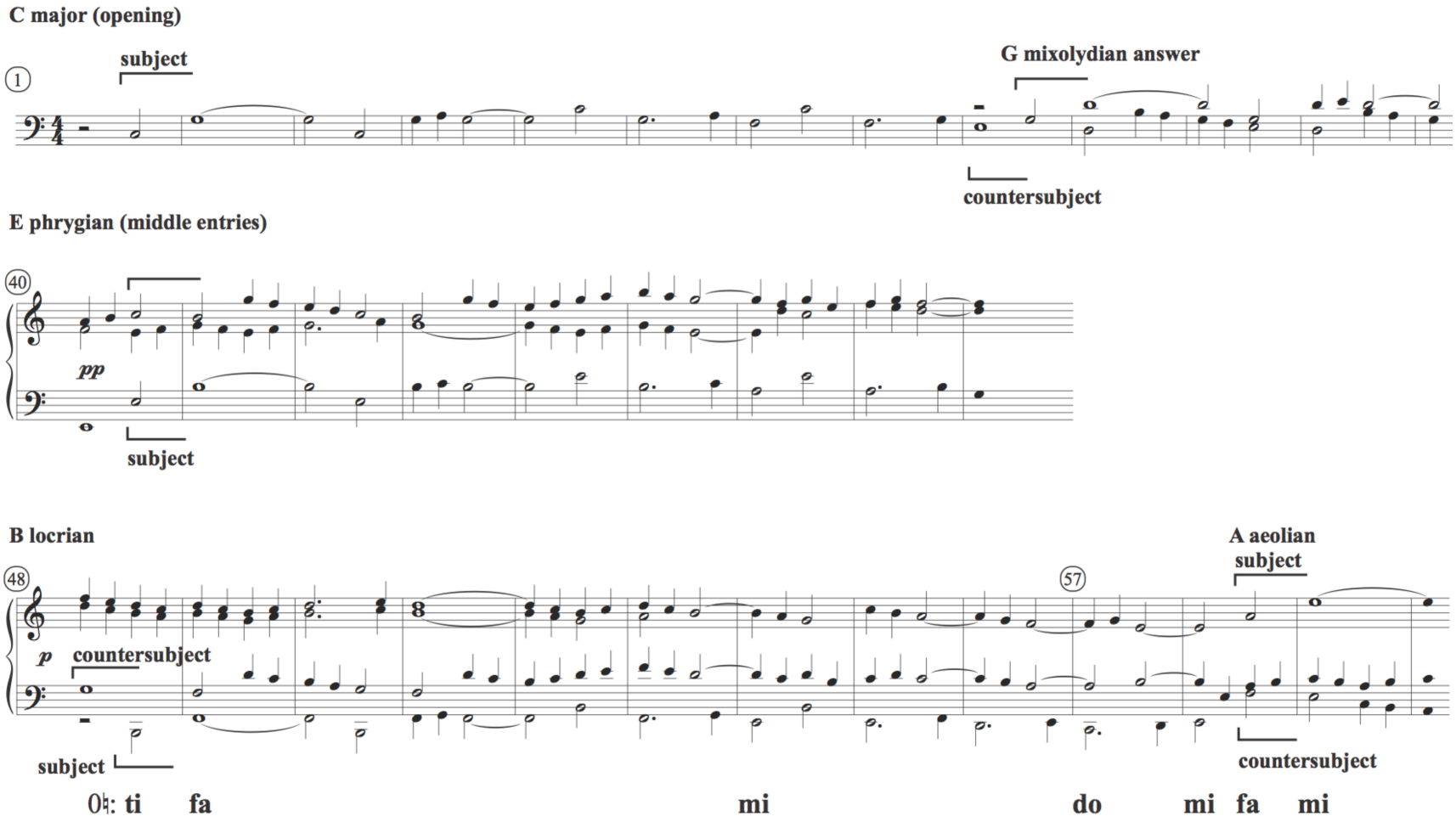
The following two fugal examples are ones in which locrian emphasis happens not at the beginning, but is, rather, enclosed by other tonics that are more stable. The following two fugues explore many diatonic rotations of their fugue subjects. In the midst of these rotations, local tonics are in constant flux.

Shostakovich's famous white-key C-major fugue from 24 Preludes and Fugues, Op. 87 (1951) maximizes relative-modal relations. In this fugue, he goes beyond Reicha's C-major fugue and rotates the subject through all seven diatonic positions (Table 6.3).[84] The effect of centric abundance between relative modes is similar in both Shostakovich and Reicha's fugues. Example 6.7 shows the opening C-major subject (mm. 1–9) and a portion of the middle section (mm. 40–59) where the similarly voiced phrygian and locrian subjects occur back-to-back.

Table 6.3. Shostakovich, Fugue in C major, subjects; locrian subject highlighted.

exposition				middle section				reprise			
0♮											
								stretto		fragment	
C-**do**	G-**so**	C-**do**	G-**so**	E-**mi**	B-**ti**	A-**la**	D-**re**	C-**do**	F-**fa**	F-**fa**	C-**do**

[84] The first four measures of Shostakovich's C-major fugue are borrowed from his patriotic cantata "Songs of the Forest" (Fanning 2001; Mazullo 2010, 64–65).



Example 6.7. Example 6.7. Shostakovich, 24 Preludes and Fugues, Op. 87 (1951), Fugue in C major, mm. 1–12, 40–59.

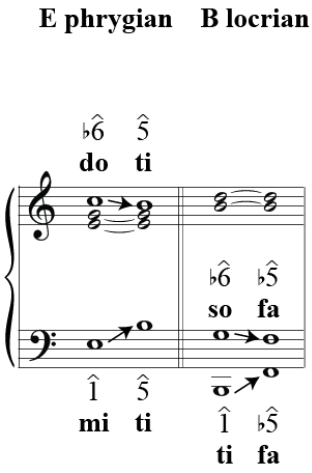


Figure 6.4 Shostakovich, Fugue in C major, melodic motions in phrygian and locrian entrances.

Figure 6.4 reduces the melodic motion of the phrygian and locrian subject statements, assuming the opening note as the tonic. Compared to the phrygian ♮$\hat{5}$, the characteristic locrian ♭$\hat{5}$ creates a diminished triad, a tritone in the bass, and an inner-voice ♭$\hat{6}$-♭$\hat{5}$ motion. Like Reicha's fugue, all rotations of the fugue subject are eventually enclosed by **do**. Locally, however, the center is always in flux. First, the locrian entrance is itself surrounded by stable **mi**'s (mm. 40 and 80). Second, the locrian subject's emphasis on **fa** is also somewhat lydian-like, especially because the subject moves to a somewhat stable **mi** in the bass. Although one may assume that the rotations of the fugue subject would begin on the tonic, in context, the locrian **ti**º could take on many other different scale-degree roles, including major-mode viiº, phrygian vº, lydian ivº, aeolian iiº.

Shostakovich's fugue from Piano Quintet in G minor, Op. 57, mvt. II predates the C-major fugue above, and it explores more diatonic scales and has considerably more chromatic episodes and transitional material. This longer, more expansive fugue explores all diatonic

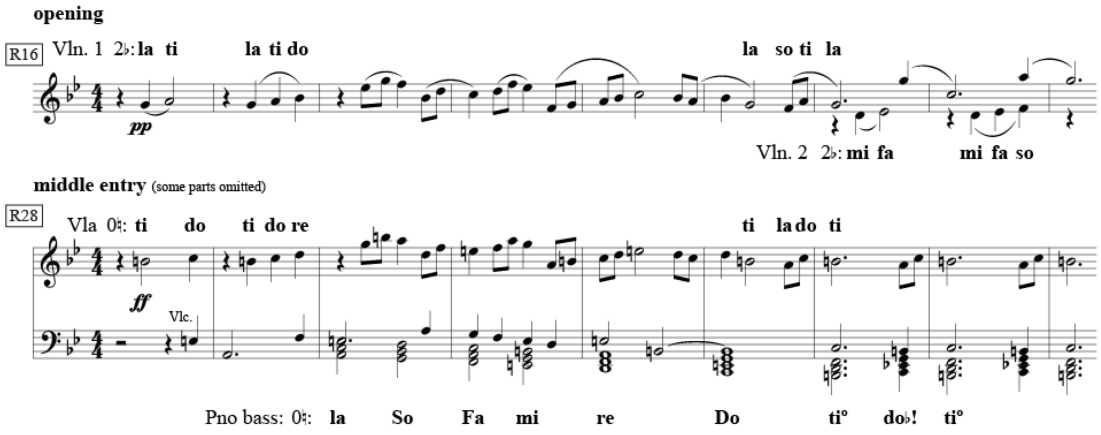
rotations of the subject save for the lydian-enclosed one (Table 6.4), albeit in a less systematic way. While the opening subject begins with a third-ascent from **la** and ends with a turn on **la** (Example 6.8), unlike the C-major fugue's key-defining, tonic-dominant opening, the G-aeolian subject consists mainly of small intervals, and it has considerably less key-defining features when transposed to other modes. Therefore, when diatonically transposed, the associated scale degrees are less stable.

The fugue's answer (Example 6.8) aptly demonstrates the subject's weak key-defining ability. The fugal answer stays in 2♭, and its scale-degree character is not entirely clear; it may begin on **mi**-as-$\hat{5}$ or **mi**-as-$\hat{1}$. The locrian-enclosed middle entry inherits the same centric ambiguity (Example 6.7, R28).[85] Indeed, the subject is enclosed by **ti** of 0♮, and, presumably, the first note retains tonic status. However, the locrian tonic is supported harmonically only at the very end of the subject. The piano harmony actually starts out with a **la** chord in the bass and descends stepwise through all diatonic chords to reveal the low **ti**^{o} (R28+6). The lack of locrian harmonic support renders the locrian tonic more ambiguous and throws the clear diatonic positions into sharp relief.

Table 6.4. Shostakovich, Quintet in G minor, mvt. II, fugue subjects; locrian subjects highlighted.

strings's exposition				piano's exposition		middle section		reprise					
2 ♭				3 ♭		5 ♭	0♮	2 ♭				3 ♭	
								stretto		stretto			ending
G-**la**	D-**mi**	G-**la**	D-**mi**	E ♭ **-do**	B ♭ **-so**	F-**mi**	B-**ti**	G-**la**	C-**re**	D-**mi**	G-**la**	C-**la**	in G phr

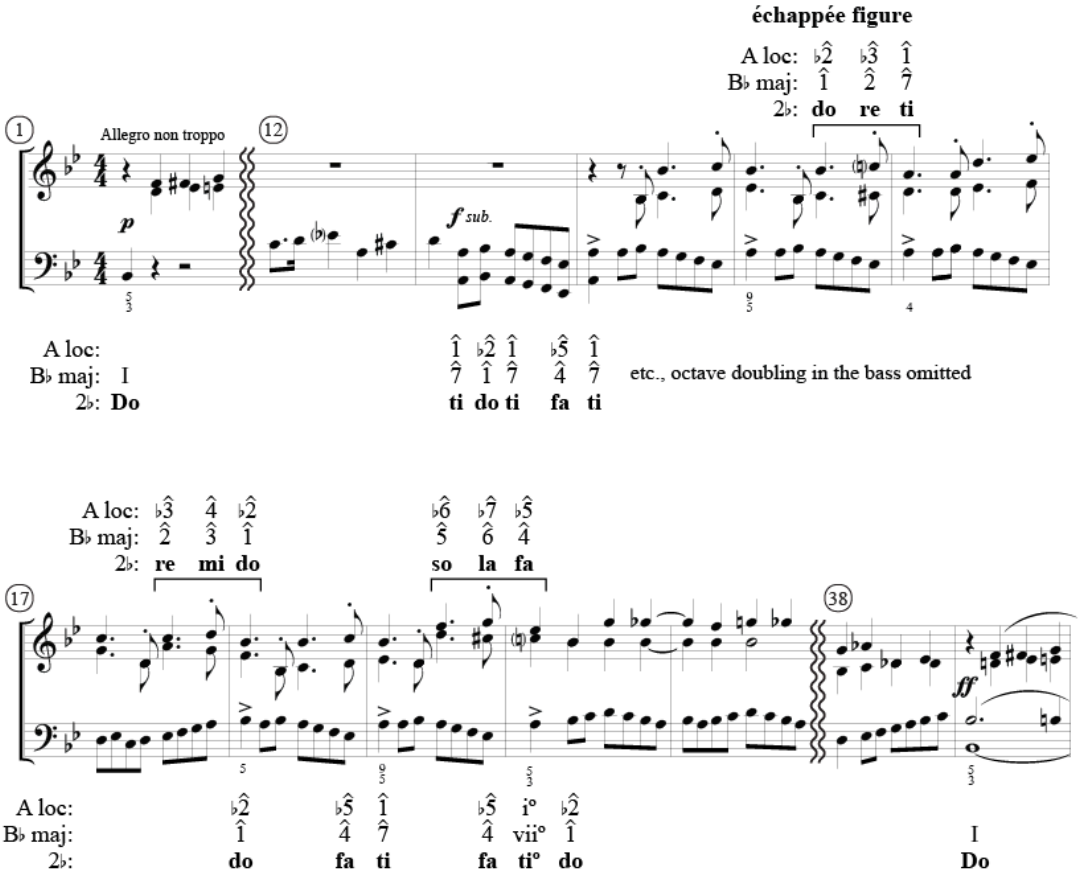
[85] Dolzhansky shows the aeolian-, phrygian- and locrian-mode fugue subjects as basic examples of Shostakovich's diatonic modes (1962, 25).



Example 6.8. Shostakovich, Quintet in G minor, Op. 57 (1940), mvt. II, selected fugue subjects (R16 and R28). © Copyright 2016 by *Izdatel'stvo DSCH*.

The two fugues above show that, with locrian subjects nested in the middle between a number of more stable tonics, it is possible for the locrian tonic to take on multiple scale-degree roles. Yet, to some extent, the explicit diatonic rotations of fugue subjects preserve the original scale degrees. The next two examples demonstrate fleeting locrian emphasis within a major-mode enclosure, in which less explicit transpositions exist.

Shostakovich's String Quartet No. 5 begins with a *piano*, chromatic, major-mode opening (mm. 1–13) (Example 6.9), after which the viola and cello suddenly erupts into a *forte*, **ti**-centered, repetitive bass line (m. 13ff). The bass line features locrian scale-degree motions shown above, including the locrian neighbor **ti-do-ti** ($\hat{1}$-$\flat\hat{2}$-$\hat{1}$) and the **fa-ti** tritone dominant ($\flat\hat{5}$-$\hat{1}$) seen previously in Examples 6.5, 6.6, and 6.8. In essence, Example 6.9 (major-enclosed locrian) is a reversal of the locrian fugue in Example 6.2 (locrian-enclosed major).

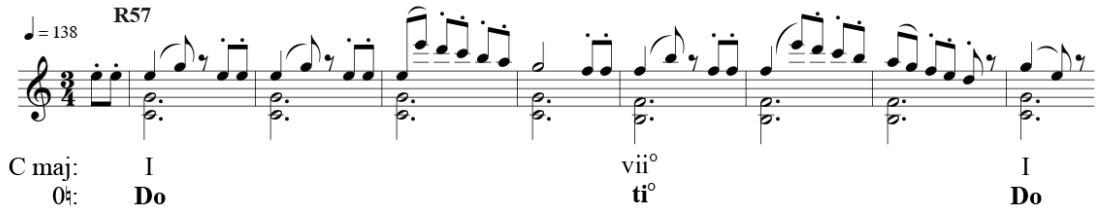


Example 6.9. Shostakovich, String Quartet No. 5, Op. 92 (1952), mvt. I, mm. 1–39. © Copyright 1956 by *Musikverlag Hans Sikorski*.

Neither major-mode or locrian-mode centers in Example 6.8 are stable; coordinated melodic and bass events alternate emphasis on **do** and **ti** every two bars. Moreover, the additional non-diatonic note C♯ (mm. 12, 15, and 19) also hints at D minor. On the downbeat of m. 16, a melodic *échappée* moves to **ti**, which coincides with **ti** in the bass. However, the middle voice lands on a chordal fourth (D) midway through an upwards scalar run. On the downbeat of m. 18, the bass and the melodic *échappée* moves to **do** with a open fifth sonority. This emphasis on **do** is temporary; the bass immediately moves back to **ti** on the downbeat of the next bar (m. 19). On the downbeat of m. 20, the melodic *échappée* "resolves" from ♭$\hat{6}$ to ♭$\hat{5}$ on top of a **ti°** triad. The locrian tonic resolves to the **do**-unison right away. Chromatic passages follow, and

more emphasis of **ti**, before a return of the opening B♭-major material in m. 39. To summarize, Example 6.9 shows that, even without the explicit diatonic rotations of fugue subjects, emphasis on **ti** in a major-mode enclosure can still be heard as a relative locrian mode. The passage shares locrian scale-degree movements with earlier, more explicit locrian examples, and the alternation of **ti** and **do** is connected by transpositions of the melodic *échappée*.

As a concluding example, Example 6.10 shows a root-position, neighboring **ti°** in a major-mode setting, which is unusual from a common-practice standpoint. By voicing it no differently from the perfect fifth that comes before it, I see Shostakovich "freeing" the diminished triad to stand as a root-position harmony, ultimately allowing the sonority to stand on its own as a dissonant tonic. From a diatonic-positional perspective, the major-mode vii° is no different from a locrian i°—the locrian tonics in Examples 6.5 to 6.10 only differ by their degree of emphasis on **ti**.



Example 6.10. Shostakovich, Symphony No. 5, mvt. II. © Copyright 2001 by *Izdatel'stvo DSCH.*

The previous six excerpts from Shostakovich's music showed locrian tonics by decreasing emphasis: from the opening locrian modes of Examples 6.4–6.5 to the diatonic transpositions of fugue subjects in Examples 6.5–6.6, the local locrian emphasis in Examples 6.7–6.9, and the single major-mode vii^{o} chord in Example 6.10. The crucial common thread in these examples is the clarity of the diatonic positions in the face of scale-degree ambiguity.

Debussy's Locrian Melody

In the following vignette—the last in this chapter—I will turn to the opening four-bar melody from the second movement of Debussy's Sonata for flute, viola, and harp (1915), a melody that Vincent (1951, 144) and Persichetti (1961, 42) both provide as a stock locrian-mode example without further commentary. My discussion will focus on the rondo-form A-section (mm. 1–22) after the melody's initial presentation (Example 6.11). Each of Debussy's three late sonatas features a modal opening in some prominent formal location: this locrian opening complements the aeolian-mode opening in the first movement of the Cello Sonata (1915) and the dorian-mode opening in the first movement of the Violin Sonata (1917). Judith Allen points out that the opening melody serves as a dominant lead-in to the larger F-tonic common to all movements (Figure 6.5), even though F-tonics occur so rarely in the second movement that it "seems to function almost by indirection" (1983, 40–45). At the end of the second movement, a single, post-cadential ending on the single note C alludes to the locrian opening and an open structure on F's dominant (Allen 1983, 46). In Allen's tonal scheme, Persichetti and Vincent's C-locrian melody becomes a dominant-based melody of F phrygian. By contrast, I will show that acknowledging the possibility of a genuine locrian tonic affords associative pathways in which parallel and relative modes become available for hearing and analyzing the music that follows.

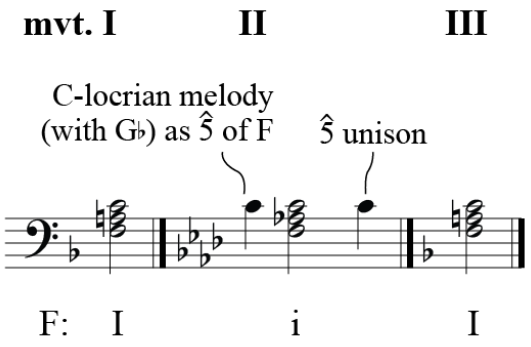
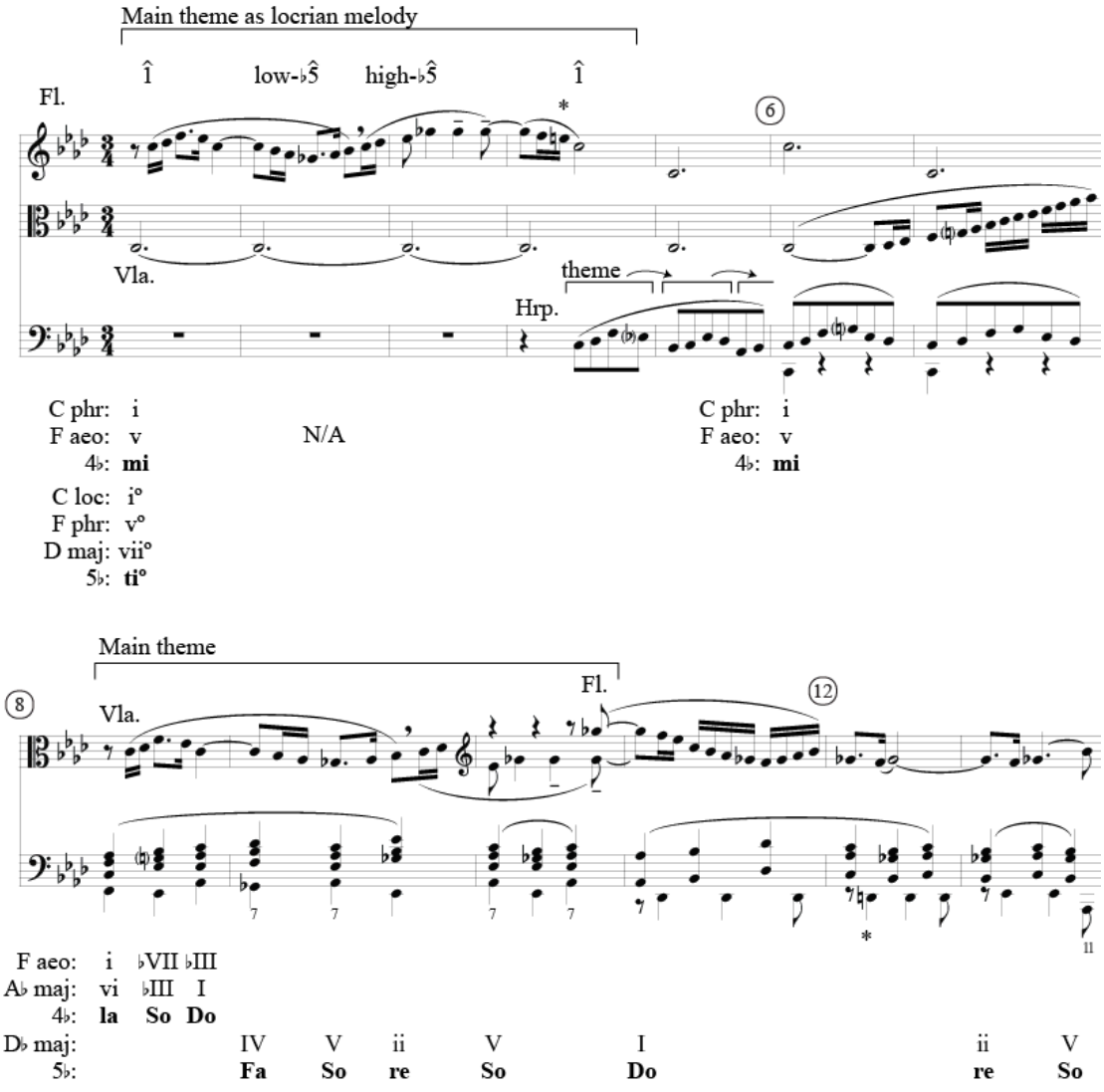
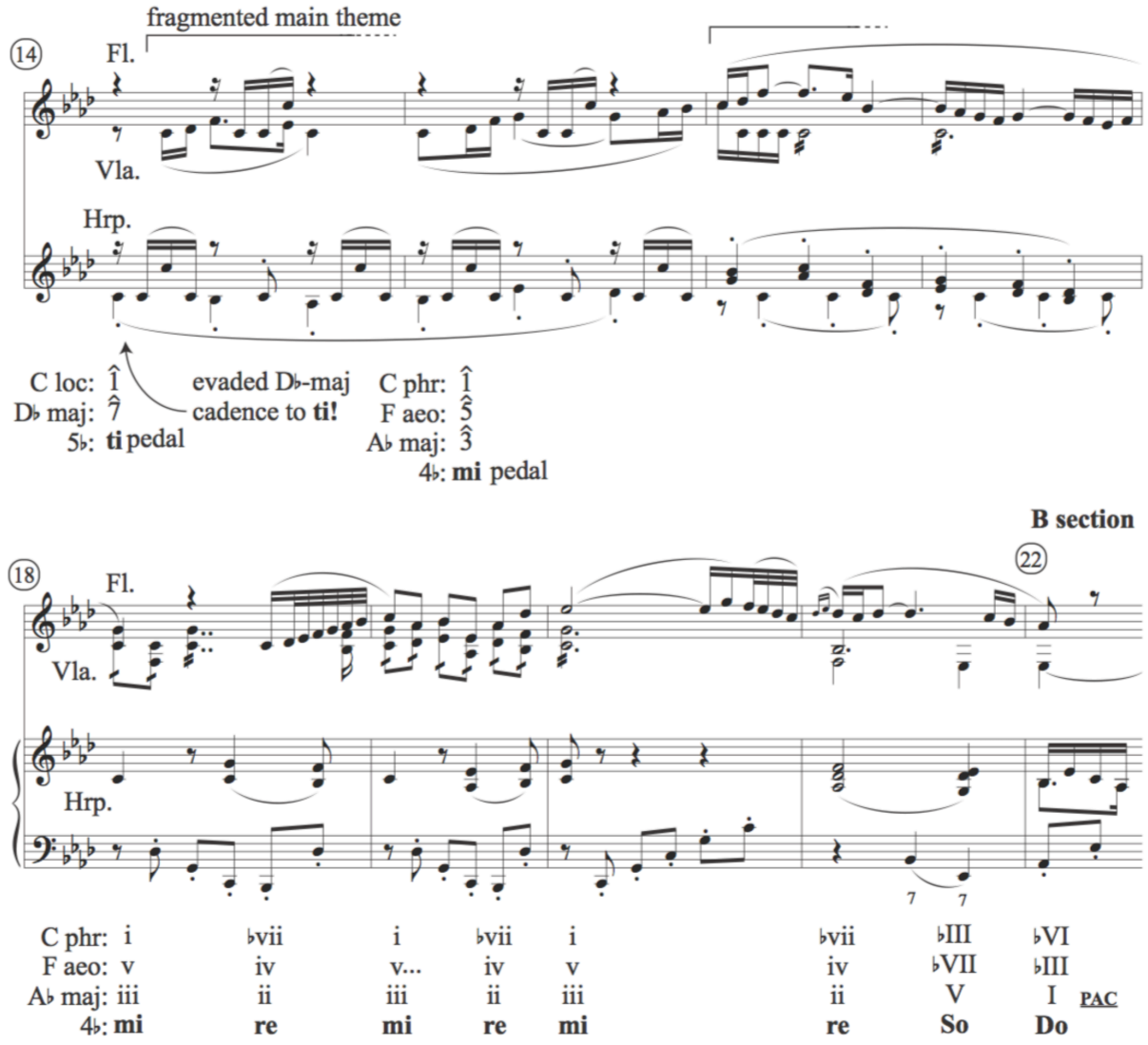


Figure 6.5. Debussy, Sonata for flute, viola, and harp, global keys (Allen 1983, 40).



Example 6.11. Debussy's Sonata for flute, viola, and harp, mvt. II, A section (mm. 1–22); square brackets show thematic material.



Example 6.11, continued.

With the exception of the E♮ at the end, the opening theme in the flute (mm. 1–4) is set in 5♭.[86] Persichetti and Vincent's locrian designation undoubtedly comes from the flute's C-enclosure and the viola's **ti**-pedal. The melody emphasizes the locrian 1̂, ♭3̂, ♭5̂, and ♭7̂; and it is

[86] Notes that do not belong to 4♭—G♭ and E♮—both participate in the chromatic F-minor cadence at the end as ♭2̂ and ♮7̂, respectively.

also bound by high and low dominants. One can imagine the same melody being quite stable in, say, C aeolian (with 3♭ instead of 5♭). Yet, in 5♭, the presence of the tritone might suggest a resolution to D♭ major, and, with the lack of G♭ in the first bar, the perfect-fourth gesture C-D♭-F also suggests the scale of 4♭ (C-phrygian $\hat{5}$-♭$\hat{6}$-$\hat{1}$) before the entrance of G♭ locks the scale onto 5♭.

The melody's subsequent harmonization and motivic fragmentation explore all of the component parts of the C-locrian melody: the C-tonic, the global F-tonic, the suggestive splintering of the 4♭ and 5♭ scales, and the two scale's respective major/minor modes. Indeed, after the opening melody, the collection shifts from 5♭ to 4♭ (m. 6), acknowledging the opening 4♭ scale. Then, the viola immediately restates the theme, which begins with a 4♭ harmonization with G♮ stated in the harp (m. 8). However, C is not emphazied as a tonic anymore; instead the music quickly shuffles through an appearance of A♭-major tonic and the "structural" F-aeolian (m. 8).

Similarly, like the lack of C in the 4♭ section, the C-center does not accompany 5♭'s return; instead, Debussy redirects it to a sustained passage in D♭ major (mm. 11–13). Yet, at m. 14, the D♭-major cadential progression is evaded to none other than ♮$\hat{7}$—the original locrian tonic! The evasive motion starts a new "phrase" (mm. 14–22); this time, the C-center is more persistent, but so is the 4♭ scale. Debussy opts to fragment the main theme within a C-**mi**-centered progression with neighboring **re** chords. However, Debussy concludes this phrase in A♭ major (m. 22) instead of the global F aeolian or the more prominent C-center.

Persichetti and Vincent both analyze the phrase as being in locrian without further commentary, but in addition to that, the analysis above has also shown how the key of C locrian is an indispensible part of the network of key relations in Debussy's sonata movement. Besides

the obvious 5♭ scale, the opening bar also alludes to 4♭ (by omission of G♭); then, after the initial melody, both 4♭ and 5♭ scales are realized in longer passages, including both scales' C-centered modes (C phrygian and C locrian) and relative major modes (A♭ major and D♭ major). The evasion to D♭ major's ♮$\hat{7}$ is perhaps the most interesting locrian reference in this movement; otherwise, after the opening melody, the locrian mode is as elusive as the movement's global F-tonic. Yet, paradoxically, C locrian sits at the center of the A section's associative network. Although the locrian mode is indeed rare, dismissing the opening C tonic as a dominant to the global (and elusive) F-tonic is to deny an array of rich associative pathways.

***

In this chapter, I have shown that the rare locrian mode has an affinity with other types of dissonant organization in the twentieth century. Its tonic-dominant dissonance makes establishing centricity somewhat paradoxical, but that paradox is also inherent in open structures. The locrian mode's instability and unfamiliarity make it an excellent example of relative modality at work, where scale-degree ambiguity brings diatonic positions into sharp focus. Gelineau Psalmody is noteworthy for incorporating all seven modes for liturgical use, yet its locrian construction avoids the characteristic tritone so much that it weakens the mode it is trying to advocate for. In contrast, Shostakovich revels in the tritone; regardless, with the entire scale present, the dissonant tonic itself often points to other more stable tonics. But from the strongest to weakest locrian emphasis in Shostakovich's music, diatonic positions prevail. A short locrian melody in Debussy shows the analytical associations afforded by the melody's component parts, suggesting analytical traction beyond the mere identification of the locrian as a local mode.

Since the locrian mode's conception in Glarean's *Dodecachordon*, the concept of diatonic completeness has been crucial to its "theoretical status." By way of a response, my three case studies show the locrian mode's compositional and analytical potential and its participation in relative *and* parallel modes. For these reasons, I argue that, as listeners, we should not treat the locrian mode as a "theoretical" concept. Rather, we can enjoy and relish in all tonic possibilities within the diatonic scale, the position-finding tritone becoming a "thematic characteristic"—in Persichetti's words (1961, 38)—of the locrian mode.

Conclusion

In this dissertation, I have examined how diatonic-modal music arose as an alternative to extreme chromaticism in the nineteenth and early twentieth centuries. Compared to chromaticism, diatonic modes may seem simple on the musical surface. But because diatonic modes open up the possibility of multiple potential tonics in one scale, diatonic-modal music of this time period can be just as relationally complex as chromatic music—in some ways, perhaps even more relationally complex.

Chapter 1, the sole chapter of Part I, introduced the core theory of *relative diatonic modalit*y. Parts II, III, and IV were organized chronologically. Part II examined isolated works in the early nineteenth century; Chapter 2 looked at Anton Reicha's experimental theory and Chapter 3 Beethoven and Chopin's lydian-mode pieces. Part III, consisting of Chapters 4 and 5, examined compositional schools that flourished later in the nineteenth century and that were instigated by chant and folk-song revivals. Chapter 6, the sole chapter of Part IV, discussed the eventual arrival of the unusual locrian mode in the twentieth century.

In terms of modal variety, Reicha (Chapter 2) and composers of the French organ school (Chapter 4) explored all six consonant modes. English folk song (Chapter 5) in the aeolian, dorian, mixolydian, and major modes were the most common, closely associated with folk-song-inspired music in the "English pastoral" style. Those composers who were adventurous enough to write in the locrian mode (Chapter 6) also wrote in other modes. For example, Shostakovich uses all seven modes, especially in his fugues and transposition of subjects, and Gelineau Psalmody also employs all seven modes.

In the journey taken from Reicha to Shostakovich in Chapters 2–6, relative modality is an ever present force. Below, I will revisit several important definitions I laid out in Chapter 1 to

see how the previous chapters have shed additional light on those concepts. When referring to modes in the paragraphs above, I used the *closing tonic*, as in the tonic determined by the final note of a piece, section, or a phrase. The tonic can be also further solidified by maintaining the same generic intervals for typical turn of phrases. Reicha (Chapter 2) does so by diatonically transposing the major-mode I-ii^7-V^7-I to various diatonic positions, so he generates new music that preserves the scale-degree progression (such as the mixolydian I-ii^7-v^7-I and phrygian i-II^7-v^{o7}-i).

This way of hearing and determining tonics described above is couched in the music's *resemblance* to parallel major/minor modes. For this reason, Niedermeyer (Chapter 4) banned chant-accompaniment harmony that resembled common-practice harmony, since it was too modern. For example, cadences such as V-i and v-i were banned in modes 1 and 2, and they were replaced by progressions such as iv-i, ♭III-i, and ♭VII-i. Subsequently, organist-composers such as Guilmant followed suit in their free compositions in "Gregorian tonality." Yet, resemblance to the parallel major/minor modes is but one way mode and centricity are determined.

Resemblance not only works through parallel modes, but also through relative modes. For listeners oriented to and saturated in the sounds of common-practice harmony, there is also a preference for the minor and aeolian tonics within a given diatonic scale. From these competing resemblances stems the *dual component* of relative modality: multiple ambiguous tonics grounded in the stability and clarity of the single diatonic scale.

Chapter 3, on the lydian mode, and Chapter 6, on the locrian mode, are "mirror" chapters that examine extreme cases, two seemingly opposing modes in terms of their resemblances to the major mode. Chapter 3 initially suggests how easily the lydian mode can conform to the parallel

major mode because of its leading tones $\hat{7}$ and $\sharp\hat{4}$ as $\hat{7}$/V. The enharmonic equivalent of $\sharp\hat{4}$, $\flat\hat{5}$, makes the locrian mode nearly impossible to conform to the parallel major mode. Therefore, as Chapter 6 shows, the locrian mode is an excellent example of relative modality at work, in which listeners engrained in major/minor modes can easily defer to another stable tonic within the same scale.

Despite the ease with which the lydian mode can conform to its parallel major mode, the single scale is still open to multiple centers. Many commentators sense a strong C-major assertion in the F-lydian ending of Beethoven's *Heiliger Dankgesang*, an example of what I call an *inconclusive final*. The most striking result of this is *open structure*, where an referential chord replaces the tonic.

Having preliminarily defined open structures in Chapter 1, Chapter 3 delves into the paradoxes of open structures by comparing Beethoven's *Heiliger Dankgesang* and Chopin's Mazurka in A minor. The Mazurka "in A minor" opens and closes on the F-major chords, which Rosen sees as creating a paradoxical structure. Although the Mazurka's ending is much more radical, Beethoven's *Heiliger Dankgesang* also contains a similar paradox, since many hear it as being "in C major" while ending on the referential F-major chord. This paradox is a large reason why Reicha (Chapter 2), despite his early-century experimentalism, mandated closure in the relative major mode for other diatonic modes.

All chapters deal with open structures in one way or another, but Vaughan Williams's music in Chapter 5 certainly features the most magical ones. Chapter 5 first examined Cecil Sharp's pioneering folk-song theory. In Sharp's theory, centric ambiguity and open structure were thought to be typical in folk song; and his folk-song accompaniment reflected the same ambiguity and paradoxical structure. Subsequently, Vaughan Williams elevated the genre to a

new level through creative usage of transposition, scalar change, and motives. Even Vaughan Williams's original music, such as "Let Beauty Awake," reflects Sharp's description of modes in folk song.

All of this suggests that there is perpetual ambiguity involved in the experience of diatonic-modal music. The dual component of relative modality suggests that the clarity of *diatonic positions*—the intervallic position in the scale—counterbalances the ambiguous scale degrees. In all the chapters, diatonic positions serve as a background foil to the discussion of scale-degree based concepts such as harmony and cadences. Diatonic positions are based on **la**-based minor solfège, which have been rarely used for theoretical or analytical purposes. In Chapter 5, I demonstrate that diatonic positions can define high-order patterns (such as cadences) in a way on par with scale degrees.

Figure C.1 encapsulates relative modality's dual components: scale-degree ambiguity and diatonic-positional clarity, experiential pluralism grounded in a single diatonic scale. Figure C.1 shows two diatonic "sequences," an ascending scale and a descending fifth harmonic sequence. It is my hope that readers can hear tonic potential in all the notes and chords in Figure C.1 (each tonic preceded by its dominants), and also recognize the single set of diatonic positions at the same time.

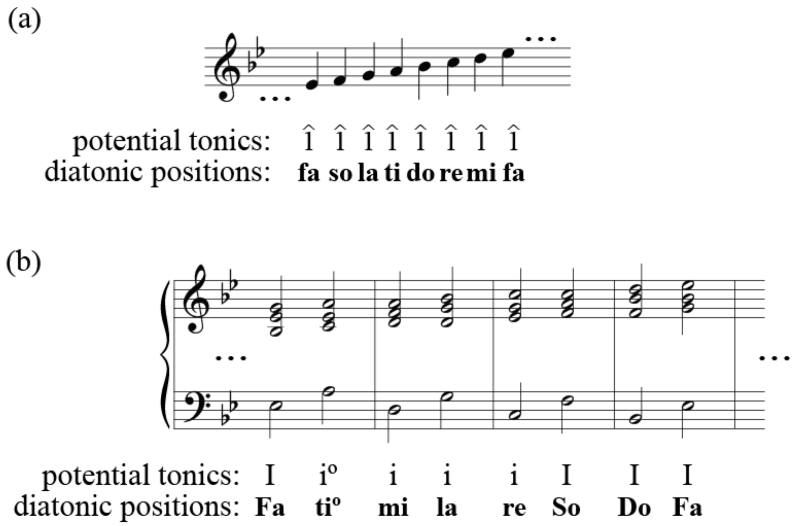
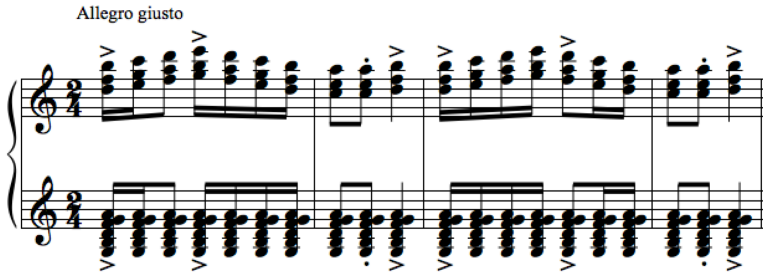


Figure C.1. Diatonic sequences and potential tonics therein.

In this dissertation, I have focused on ways that common-practice music is reimagined and enriched through diatonic modes, and I have limited my study to music in which core elements of common-practice harmony remain, such as the focus on consonant harmonies, the balance of melody and harmony, and the use of cadences as a closing rhetorical function. For future research of diatonic repertoires that depart more radically from common-practice harmony, I argue that diatonic positions remain as an unchanging factor. Diatonic positions are relatively neutral; all they depend on are intervals within the scale. Analyses based on scale degrees and Roman numerals, however, are reliant on the concept of a tonic or tone center. And if a tone center becomes less salient, then so would scale degrees.

Two brief examples below show how relative modality may work in repertoires that depart more significantly from common-practice music. These examples not only suggest avenues for future research, but they also place this dissertation's music in the larger context of twentieth-century diatonicism.



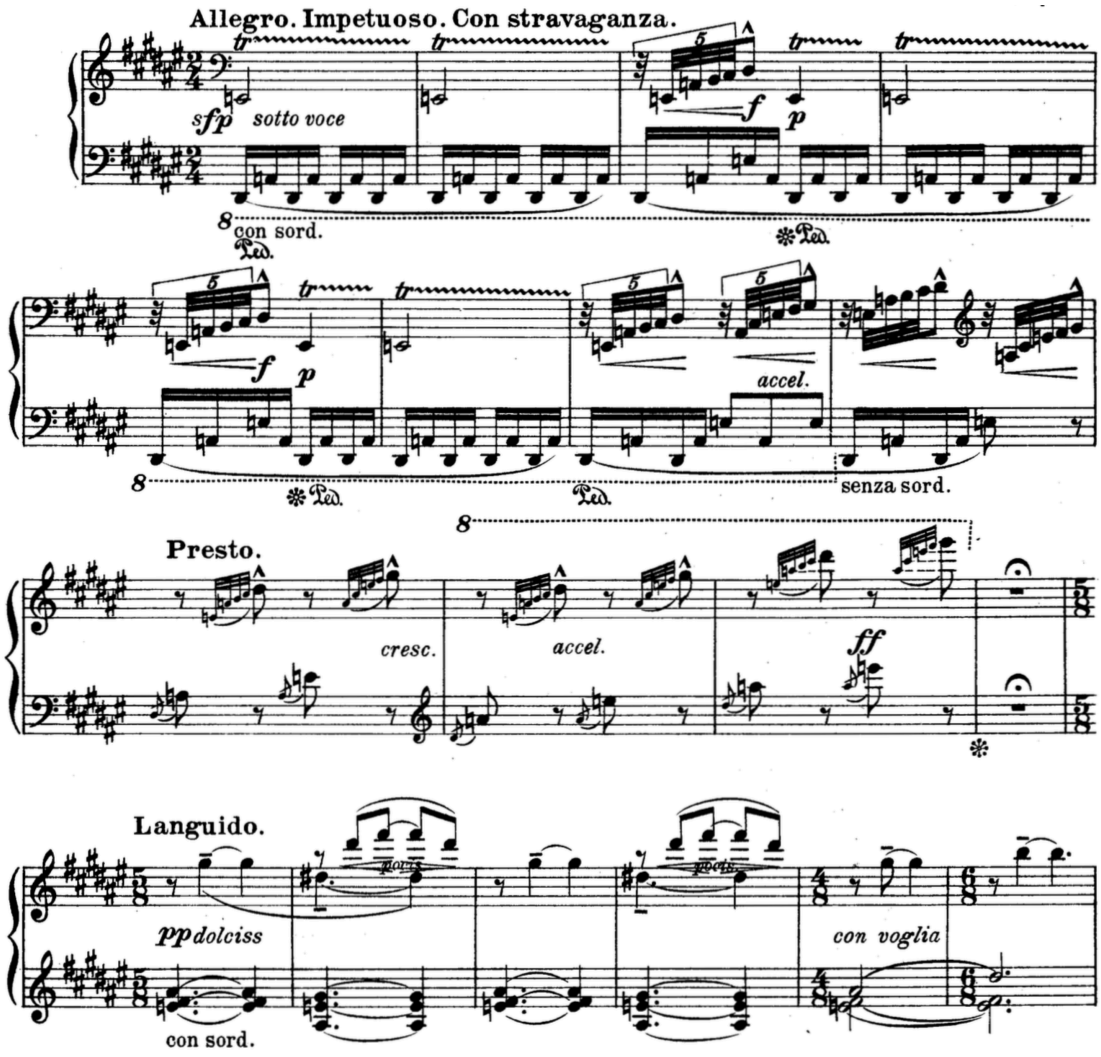
Example C.1. Stravinsky, *Petrushka* (1911), Russian Dance.

Even textbook examples of post-tonal diatonic modality may be influenced by relative modes. The Russian Dance from Stravinsky's *Petrushka* (Example C.2) is cited by Straus in *Introduction to Post-Tonal Theory* as an example of "nonfunctional diatonicism" (2016, 244). He presents it as an unequivocal example of G mixolydian, and he clarifies that "it is not traditionally tonal—just try analyzing it with Roman numerals!" (2016, 244). Yet, under major/minor preference, it is not difficult to hear the static harmony as a V^9 chord in C major that does not resolve to I. Diatonic positions, however, provide a neutral way to describe notes in Example C.1; my second example highlights the use of diatonic positions when scale degrees become less relevant.[87]

Now consider the opening of Scriabin's Piano Sonata No. 5 (1907) (Example C.3), which diverges even further from common-practice harmony. The Sonata begins with an accelerating *impetuoso* gesture that leads into the more introspective *languido* section (the Sonata ends with the same *impetuoso* gesture). There is no problem using the more neutral diatonic positions to describe the excerpt. Within the 4♯ scale, the left hand articulates a dissonant, non-tertian **ti-fa-**

[87] In the previous edition of *Introduction to Post-Tonal Theory*, Straus advocates for neutral descriptions of diatonic scales (e.g., 1♯, 2♯) when "a centric tone becomes difficult to determine or musically irrelevant" (2005, 140). His reasoning comes incredibly close to that of diatonic positions.

do chord with **ti** in the bass, and the right hand accents **ti** and **mi** in the top voice. By contrast, the center is less salient. What mode is this in? What is the tonic or tone center? Could it be **ti** or **fa**? Does the *impetuoso* section end on a locrian half cadence?



Example C.2. Scriabin, Piano Sonata No. 5 (1907), mm. 1–18.

Scriabin's Sonata is but one example of compositional practices that create a larger gulf between the utility and efficacy of scale degrees on the one hand and diatonic positions on the other. In more radical departures from common-practice harmony that nevertheless retain the

diatonic scale as an essential element, the more neutral concept of diatonic positions remains a powerful descriptor; scale degrees, however, become less relevant.

The Scriabin example, then, provides a nice point of contrast with the music that this dissertation focused on. Close diatonic-modal extensions of common-practice harmony maintain a delicate balance between scale degree and diatonic position such that both aspects remain distinct and salient. The dual component of scale degree and diatonic position—or centricity and scale—is what creates new musical possibilities and relations that the major and minor modes alone cannot afford.

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Curriculum Vitae

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Education

Ph.D. in Music Theory — 2019
Indiana University Jacobs School of Music, Bloomington, IN
Dissertation: "Relative Diatonic Modality in Extended Common-Practice Music" (Blair Johnston, chair)

B.Mus. (first-class honours) in Clarinet Performance — 2012
Griffith University Queensland Conservatorium, Brisbane, Australia

Employment

Adjunct Instructor, Butler University — Aug 2017–May 2019

Associate Instructor, Music in General Studies program, Indiana University — Aug 2018–May 2019

Associate Instructor, Department of Music Theory, Indiana University — Aug 2013–May 2017

Woodwind Specialist, Sheldon College, Redlands, Australia — Jan 2012–Dec 2012

Selected Presentations

"Relative Diatonic Modality in English Pastoral Music: A Dorian-Mode Case Study" — 2018
Music Theory Society of the Mid-Atlantic, Wayne, NJ
Society for Music Theory, San Antonio, TX

"Modal Spelled Pitch Classes" — 2017
Music Theory Midwest, Iowa City, IA
Society for Music Theory, Arlington, VA

"'Introducing Ancient Modes into Modern Harmony': The Franco-Belgian *tonalité grégorienne*" — 2017
Music Theory Society of New York State, Geneva, NY

Selected Compositions

Five Pentatonic Signature Transformation Mirror Canons, 2'15", for oboe and bassoon	2018
Two Locrian Gymnopédies, 3', for piano	2018
Five Pentatonic Signature Transformation Canons, 2'15", for viola and cello	2017
Subtactus Canons, 7', for clarinet and bass clarinet	2016–17
Simple Music in Triple Time (2015–17), for piano	2015–17

Awards

Dorothy Payne Award, Music Theory Society of the Mid-Atlantic	2018
Dissertation-Year Fellowship in Music Theory, Indiana University	2017–18
Jacobs School of Music Fellowship, Indiana University	2014–17
Anthem Composition Competition, American Guild of Organists, Bloomington Chapter	2014
1st place, Clarinet Open Section, Clarinet and Saxophone Competition, Queensland Clarinet and Saxophone Society (Australia)	2012, 2010

Performance Diplomas

ATCL (Associate Diploma, Trinity College, London), Flute Recital	May 2012
AMusA (Associate in Music, Australia), Music Theory	Aug 2011
AMusA, Piano	Oct 2008
ATCL, Clarinet Recital	Aug 2008